71

Managing the mobile user community.....with Digital Hot*Desk* Technical Overview

Avaya Communication

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communication

Agenda

Definitions

Features

Architecture

- Integration/Connectivity

- Replication (Database Redundancy)

Administration

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Types of Number

Location Numbers

Each User may have up to 3 Location Numbers.

Preset Numbers

Each User has 9 Preset Numbers (1 - 9)

Custom Numbers

Any number that is not a Preset Number

Default Location Number

Number that a user's CLN reverts to at "midnight"

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What is a ReRoute ?

Digital Hot*Desk* users may have up to three location numbers, known as *ReRoutes*, where the system tries to contact them before sending the caller into their mailbox.

The actual number of *ReRoutes* available to a user is defined by the System Administrator.

These location numbers may be changed by the Telephone User Interface *TUI*, or via a PC based Graphical User Interface *GUI*.

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Location Numbers

The first location number or ReRoute is known as the 'Current Location Number' or 'CLN' for short.

- The second location number is known as the 'Second Location Number' or 'SLN'.

- The third location number is known as the 'Third Location Number' or 'TLN'.

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What is a Preset ?

Digital *HotDesk* users may have up to nine numbers, known as Presets, that are stored in a 'personal address book'.

These are the numbers where the user is most often contacted, i.e. their Desk, Home or Mobile, and may be changed via the TUI.

A user may change their Current Location Number to one of these Preset numbers by simply pressing the appropriate digit (1 - 9)

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Administration

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Announce Called Party

This call is for 3870

Tells you who the call is for.

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Call Filtering

Internal	External	Both
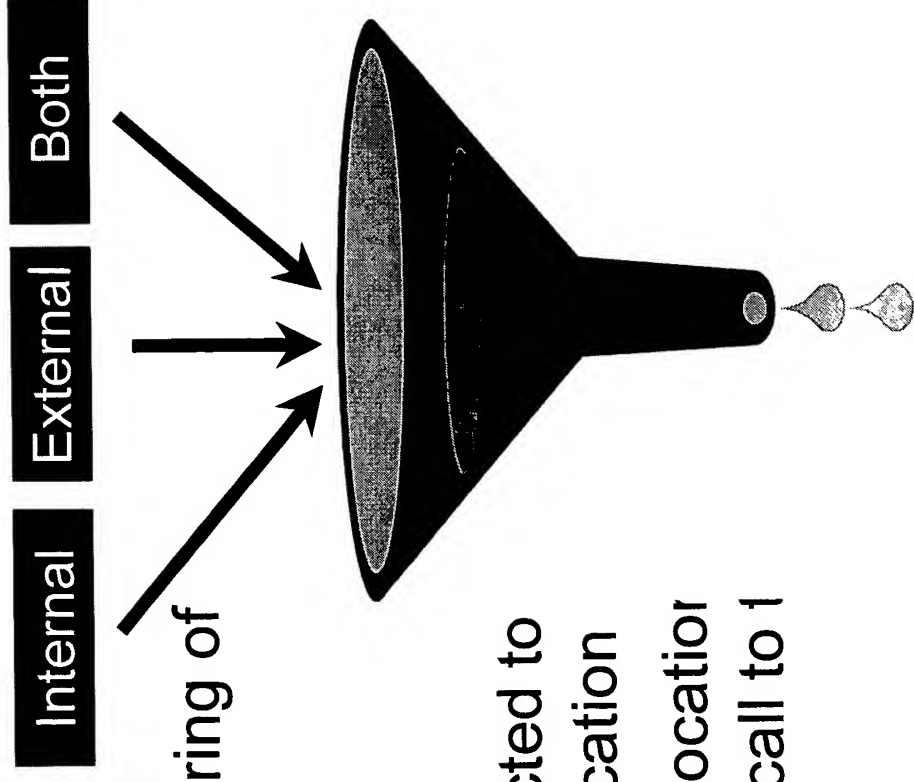
- Option to select filtering of
  - External calls only
  - Internal calls only
  - All calls

All calls will be directed to Second or Third Location

- Second and Third Location owner can transfer call to t user

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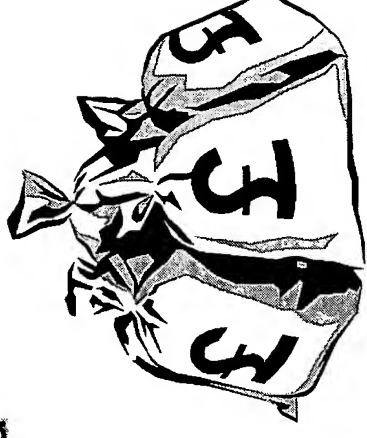
Providing......
Do Not Disturb!

Only receive calls from 'trusted' numbers.

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Call Billing

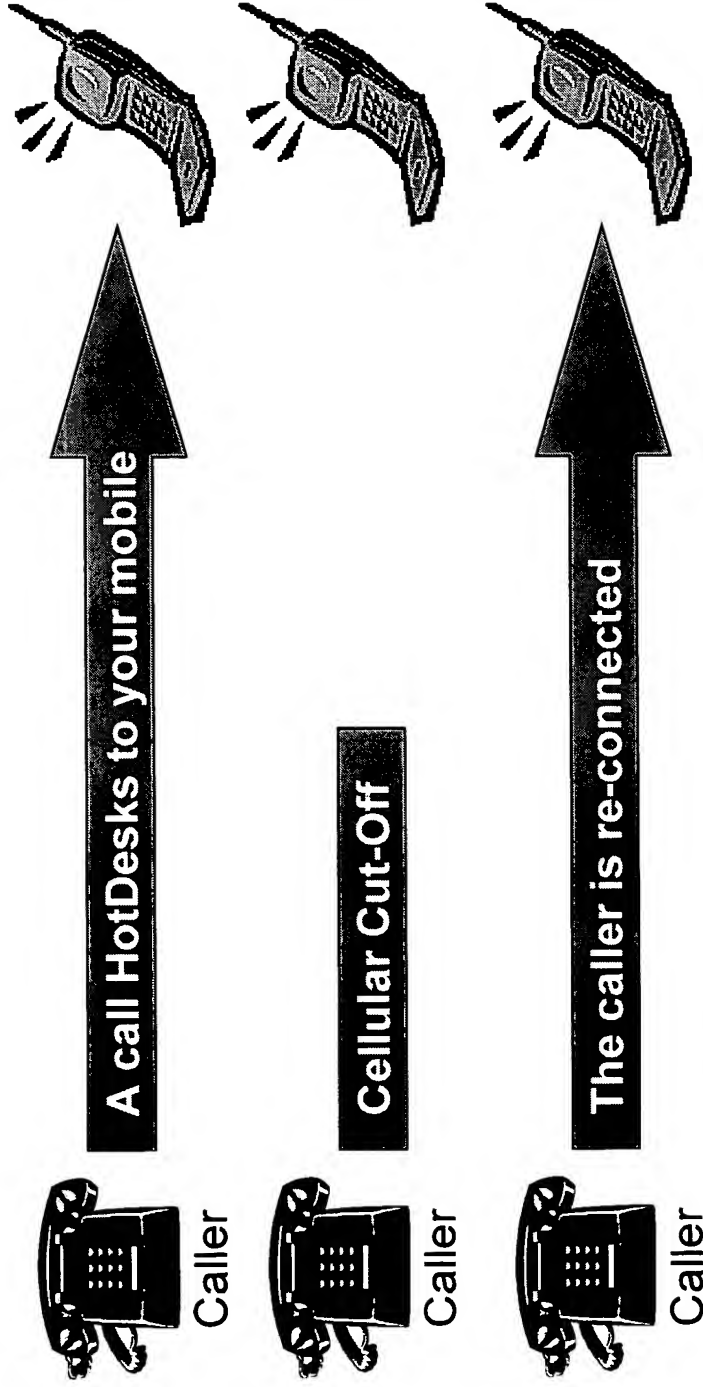Attributes Costs to Digital HotDesk Users

Stores the following information about each call:

- UserID
- GroupID
- Date and time the call was connected
- Number Calling / Number Called
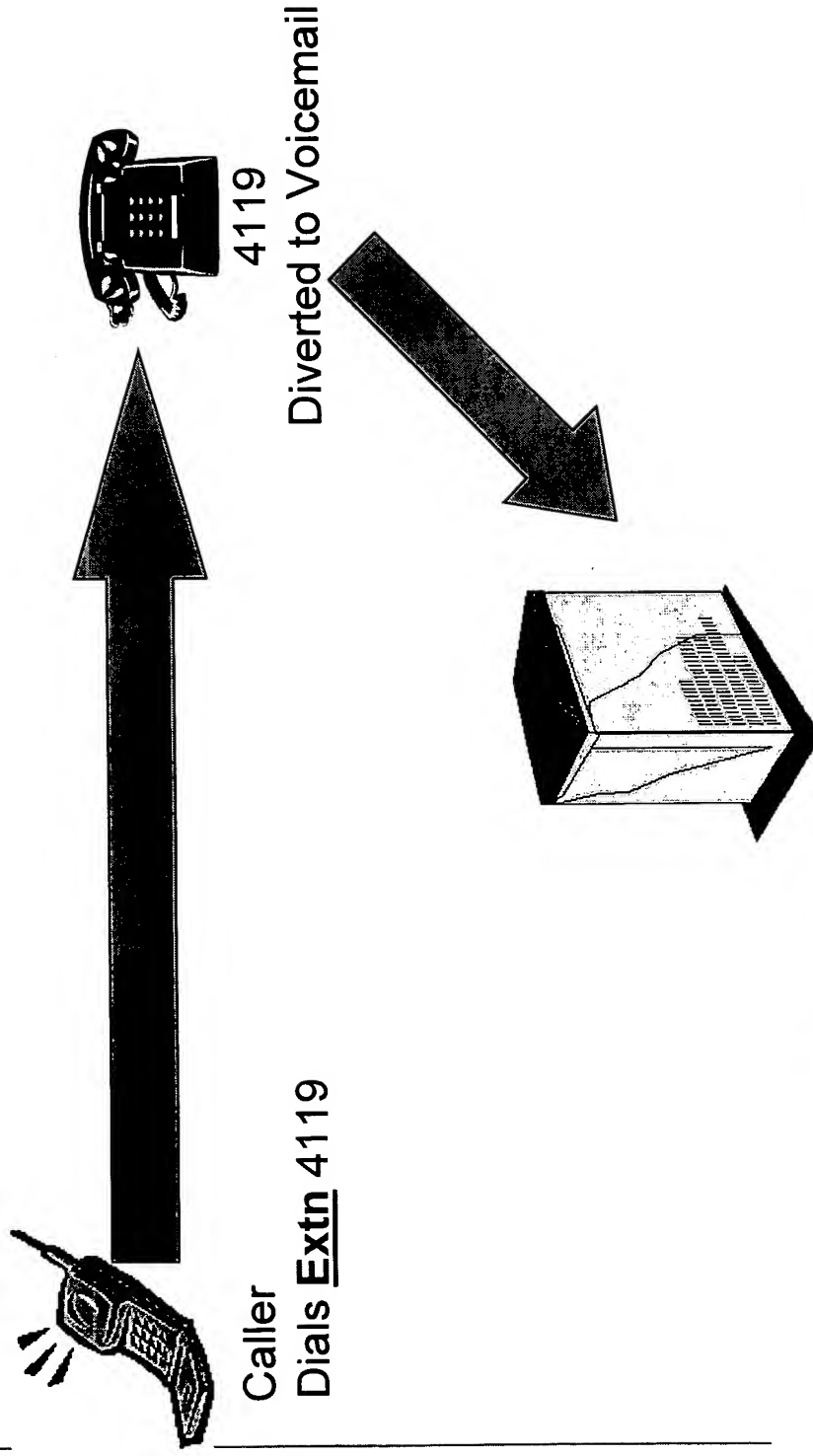- Call Duration
- Port / Channel Used
- etc...

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Cellular Cut-Off

A call HotDesks to your mobile

Caller

Cellular Cut-Off

Caller

The caller is re-connected

Caller

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2-4

Diversion Override

Caller
Dials <u>Extn</u> 4119

4119
Diverted to Voicemail

Calls direct to the Extn divert to voice mail.

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Diversion Override

Phone Rings

Caller
Dials **DHD** 3019

4119
Diverted to Voicemail
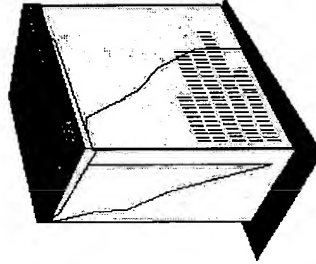
*DPNSS ONLY

HotDesk calls override the diversion.

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Enhanced ANI Matching

0780

00 302

44 713

611 121 01252
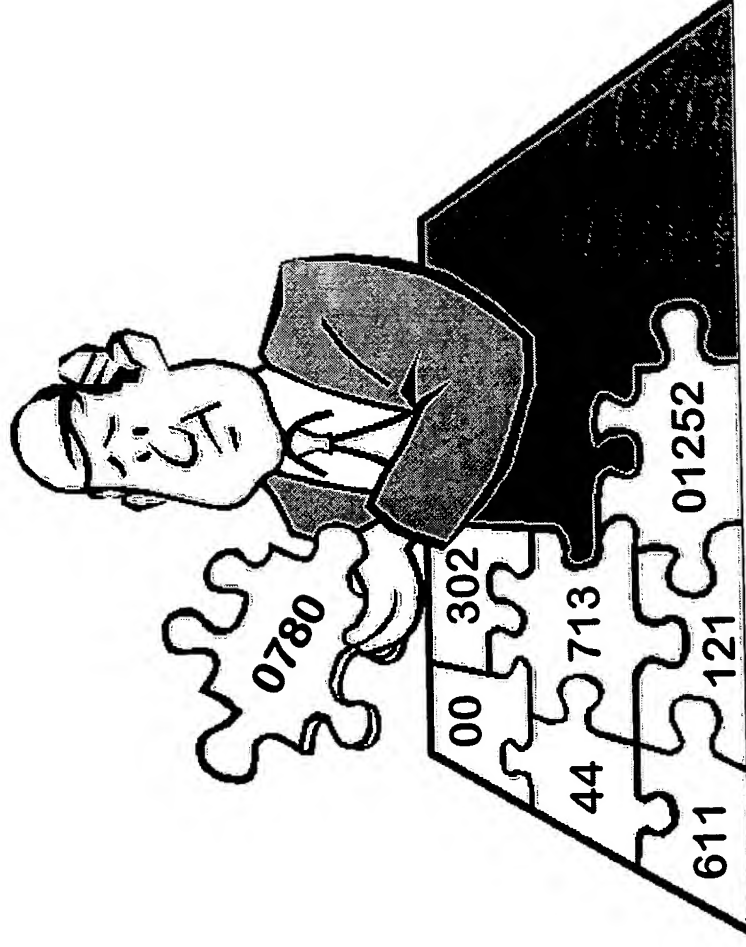
Tries to match caller's ANI to known Nos.

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Enhanced ANI Matching

Known number to match = 01252 303870

An incoming ANI might be:

441252303870   Rule :   If length = 12 and starts 441
                          change the 441 to 01.

12 digits

Number Matches.

01252303870

Used in Call Filtering,Mobile Toggle,Zero In.

∧V∧Y∧
communication

Enhanced ANI Matching

Known number to match = 0780 169370

An incoming ANI might be:

Rule :   If length = 9 and starts 7
change the 7 to 07.

Number Matches.

7801169370
}
9 digits

07801169370

Used in Call Filtering,Mobile Toggle,Zero In.

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Error Logging

API.TXT
Detailed log file that records every action within Digital HotDesk.

Call Events
Advanced logging utility for tracing sequence of events in a call.

VT100Events
Log all changes made via the TUI, GUI, Serenade or Mobile Togg

Windows NT Event Logs
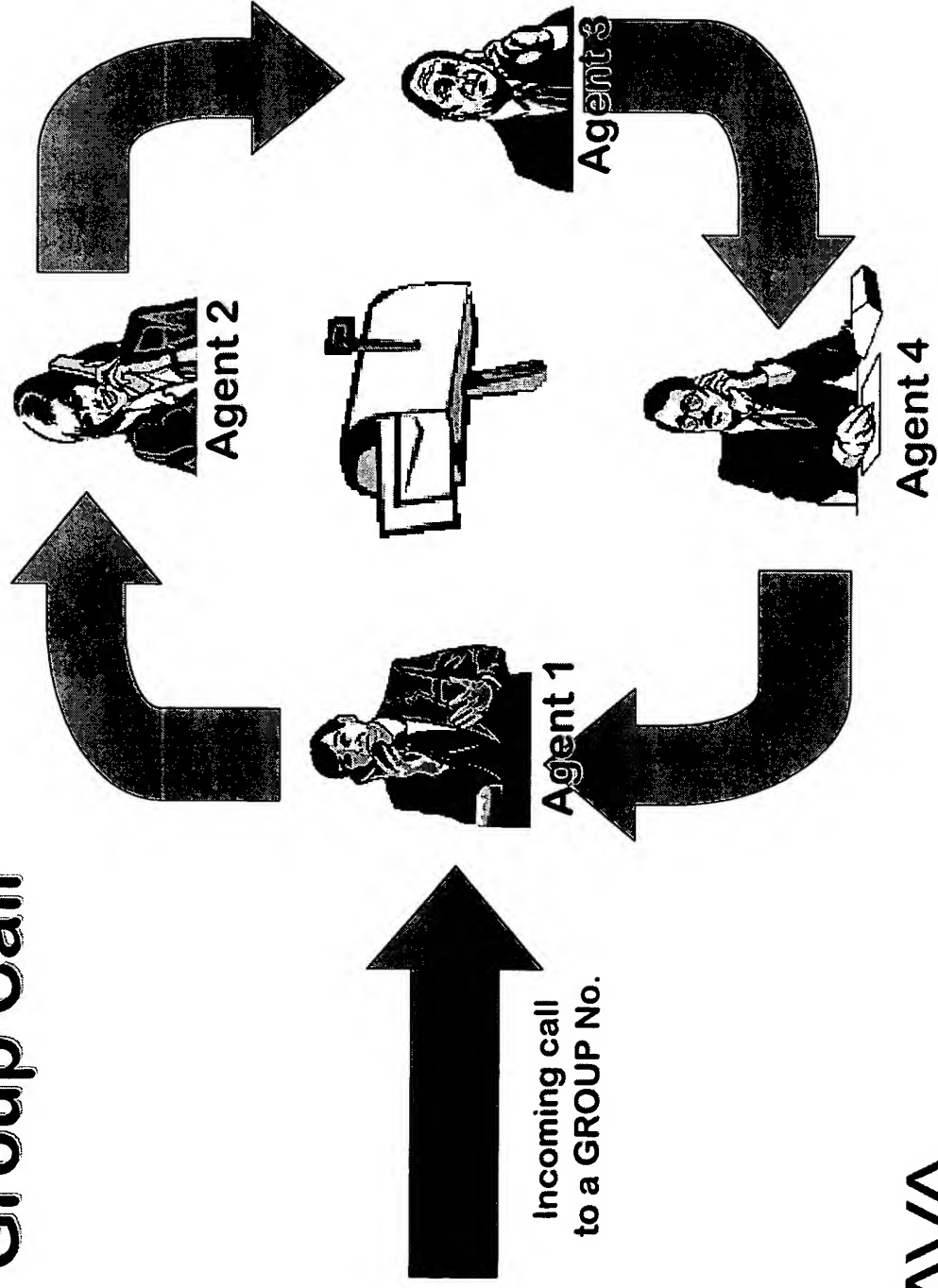Traps NT Operating System and Application problems.

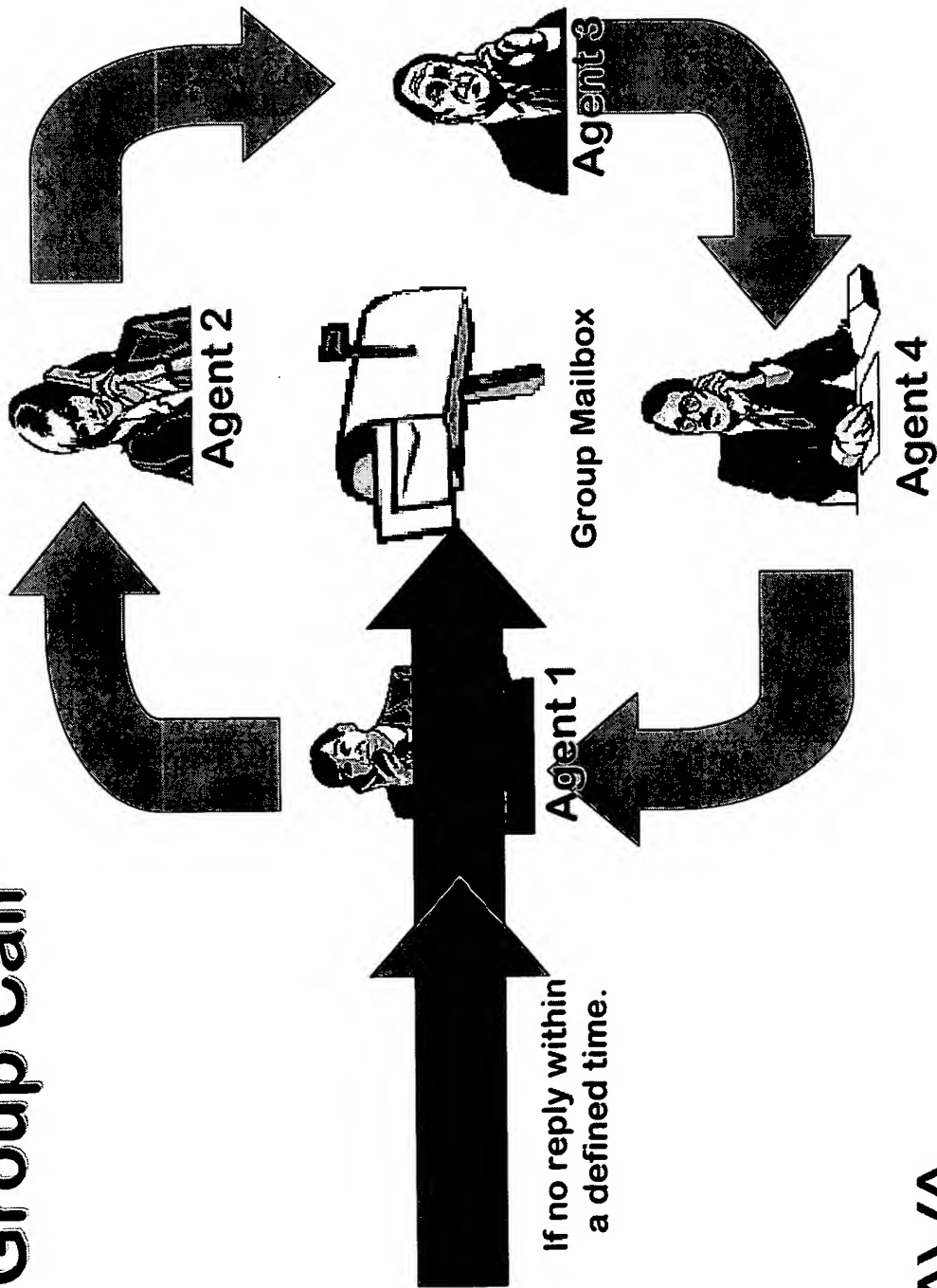**Designed to assist in Fault Finding.**

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Group Call

- Mobile Hunt Group application
- Normal DHD re-routes still apply
- Unlimited number of groups.
- Multiple group membership.
- No transfer to members mailbox.
- Linear or cyclical hunting pattern.

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Group Call

Agent 2

Agent 3

Agent 4

Agent 1

Incoming call
to a GROUP No.

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Group Call

Agent 2

Agent 1

Group Mailbox

Agent 3

Agent 4

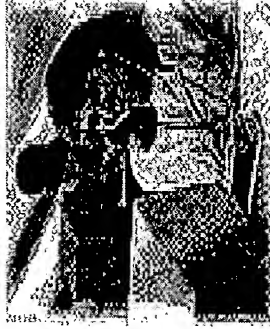If no reply within a defined time.

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Incoming Caller Options

Based on failure to connect to called party

Series of call transfer options for caller connection to...

Operator
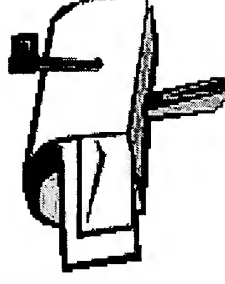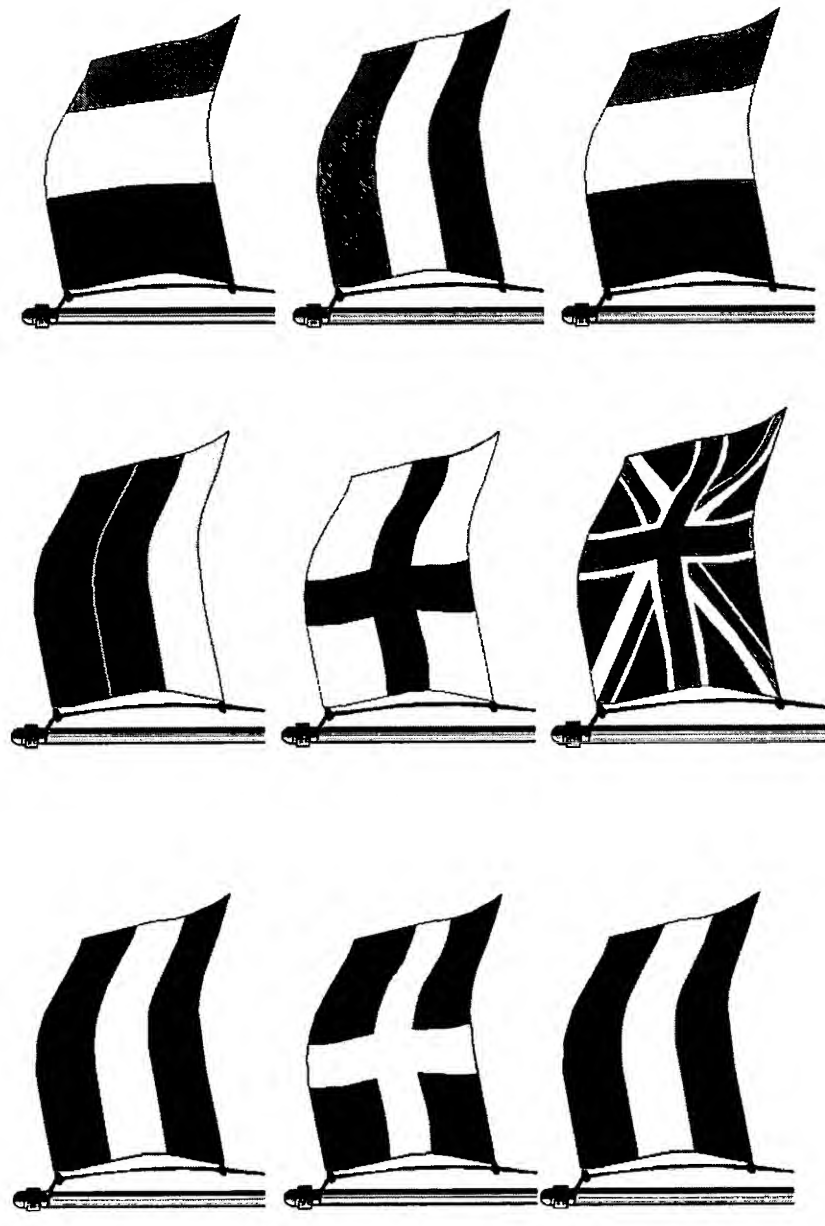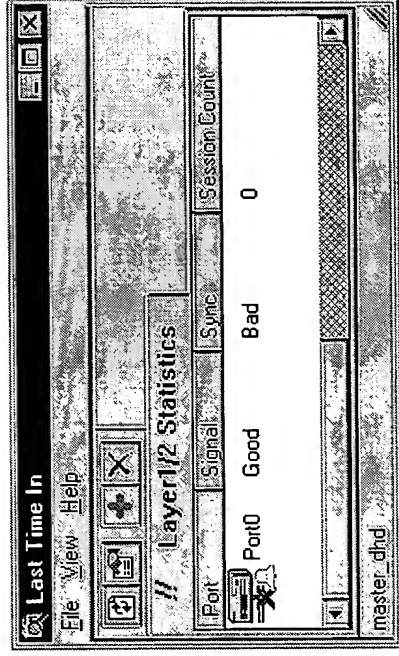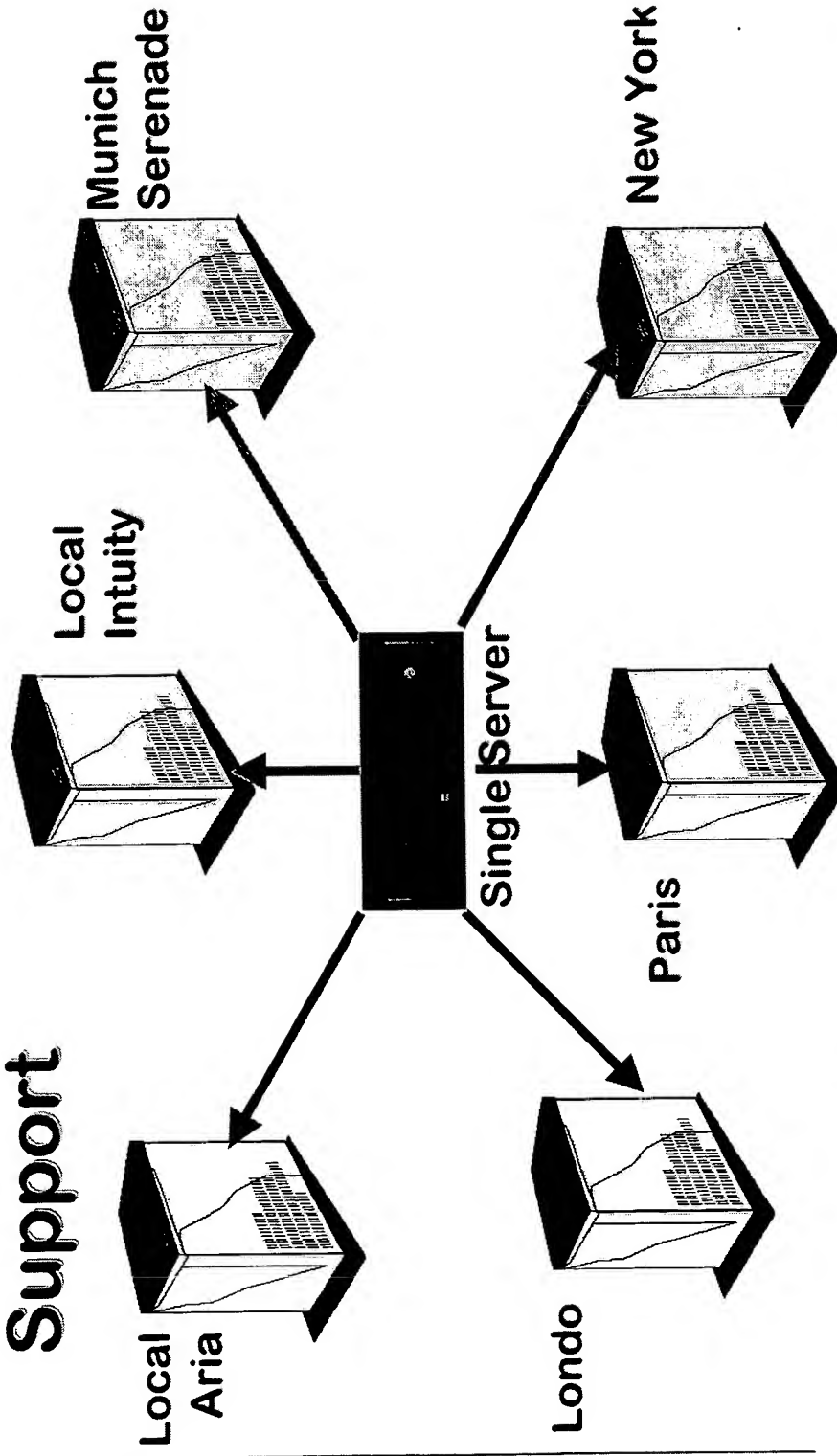
Call Centre

Secretary

Voicemail

Gives the caller options prior to voice mail.

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Languages

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Link Alarm

Hot*Desk* Watchdog monitors the link between the database and the application.

Last Time In
File View Help

Layer1/2 Statistics

Port	Signal	Sync	Session Count
Port0	Good	Bad	0

master_dhd

If a problem is encountered a Link Alarm is raised to the PABX, preventing further calls being accepted.

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Multiple Voicemail Support

Munich Serenade

New York

Local Intuity

Single Server

Paris

Local Aria

Londo

One HotDesk can support multiple VMs.

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PIN Acceptance of Calls

HotDesk call on offer..
Please enter your PIN
to accept the call

Only the correct person can answer the call.

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PIN Access

Welcome to HotDesk...
Please enter your
HotDesk number,
followed by your PIN.

Secures the TUI against unauthorised use.

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Protocols

Digital Hot*Desk* supports the following protocols:
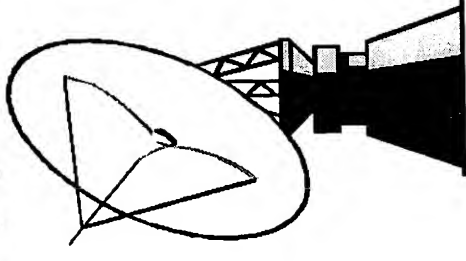
E1 Qsig   -   15 Channels In / 15 Channels Out

T1 Qsig   -   11 Channels In / 11 Channels Out

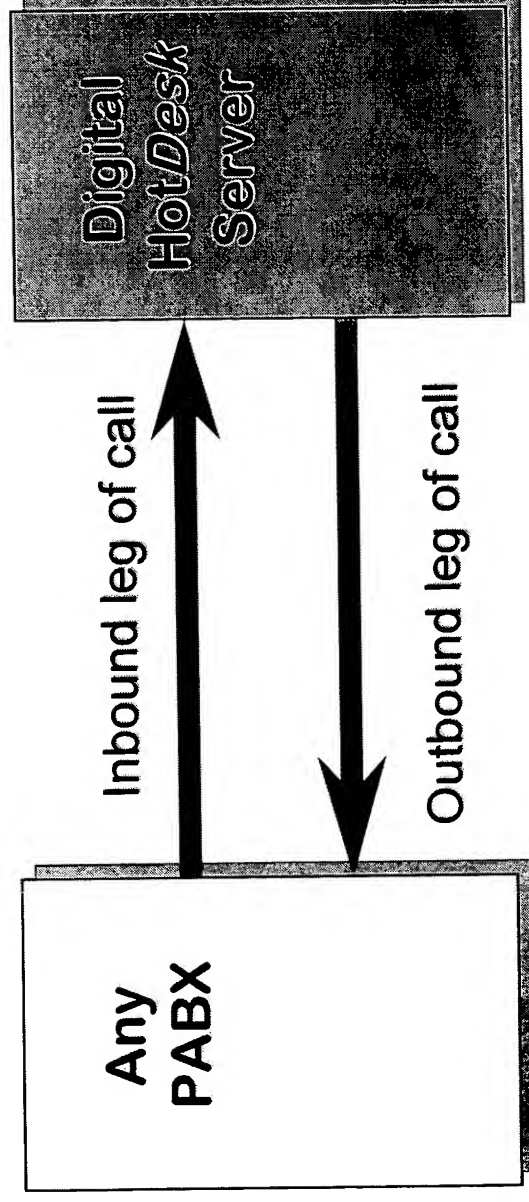E1 DPNSS -   15 Channels In / 15 Channels Out

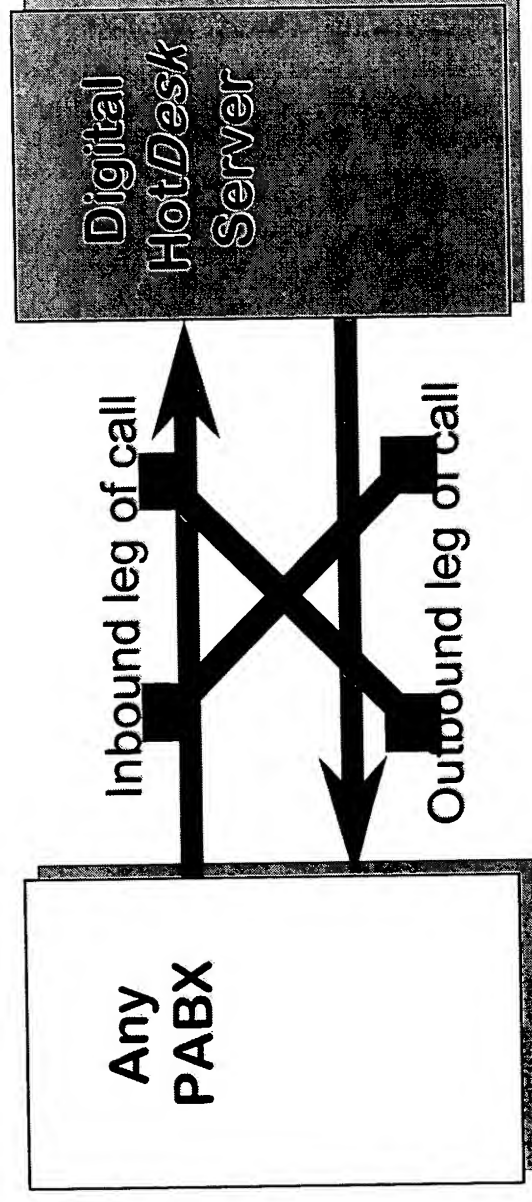Dependant on Conferencing

communication

ANTI TROMBONING

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Route Optimisation

Any PABX

Inbound leg of call

Outbound leg of call

Digital HotDesk Server

No Optimisation = HotDesk stays in the call.

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Route Optimisation

Any
PABX

Digital
HotDesk
Server

Inbound leg of call

Outbound leg of call

Optimising 'frees' channels for more calls.

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Intelligent Optimisation

Digital Hot*Desk* 2.5 optimises the call depending on the type of call and the Class of Service of the user.

Certain features require that Digital Hot*Desk* stays present for the duration of the call.

Optimisation is controlled by the PABX. Digital Hot*Desk* will either allow the optimisation to happen, or it will stop the optimisation, if the user has a configuration setting that requires it to be present for the duration of the call.

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What Stops Optimisation

If a user is SNUPHF enabled, the call will not optimise for a 5 second period after the call is answered.

If MidCallTransfer is enabled in a user's ClassOfService.

When a user makes a SecureCall and VoiceRecorder is enabled in the Site.

If Cellular Cut-Off is enabled in a user's ClassOfService.

If a Vortex feature is enabled in a user's ClassOfService.

Group Calls.

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What Causes
Optimisation

In all other cases Digital Hot*Desk* server will pass the optimisation request from the PABX.
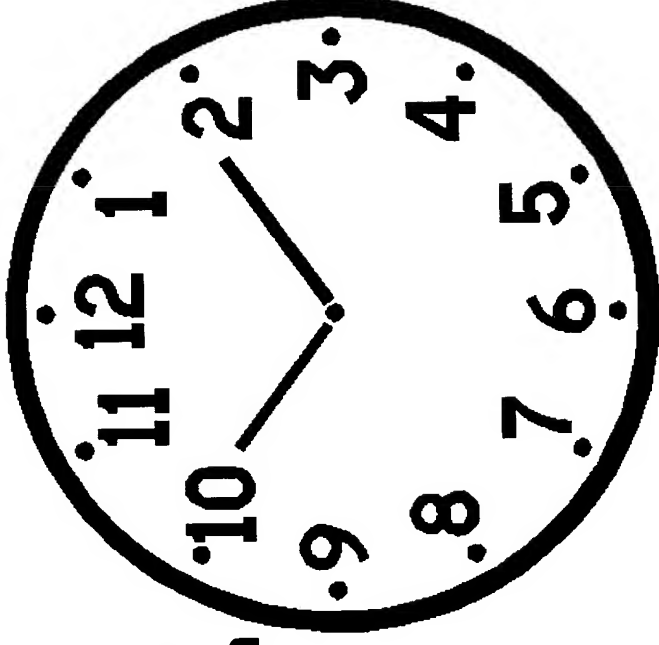
But..

It's important to remember that..

NOT ALL CALLS CAN OPTIMISE.

It is not under control of Digital Hot*Desk*.

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Midnight Reset (Scheduler)

Users may define the time that their Current Location Number changes.
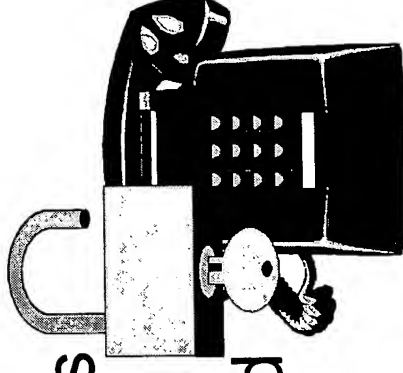
DHD time = local time.

Secure Call

- Provides capability for HotDesk user to call any permitted destination
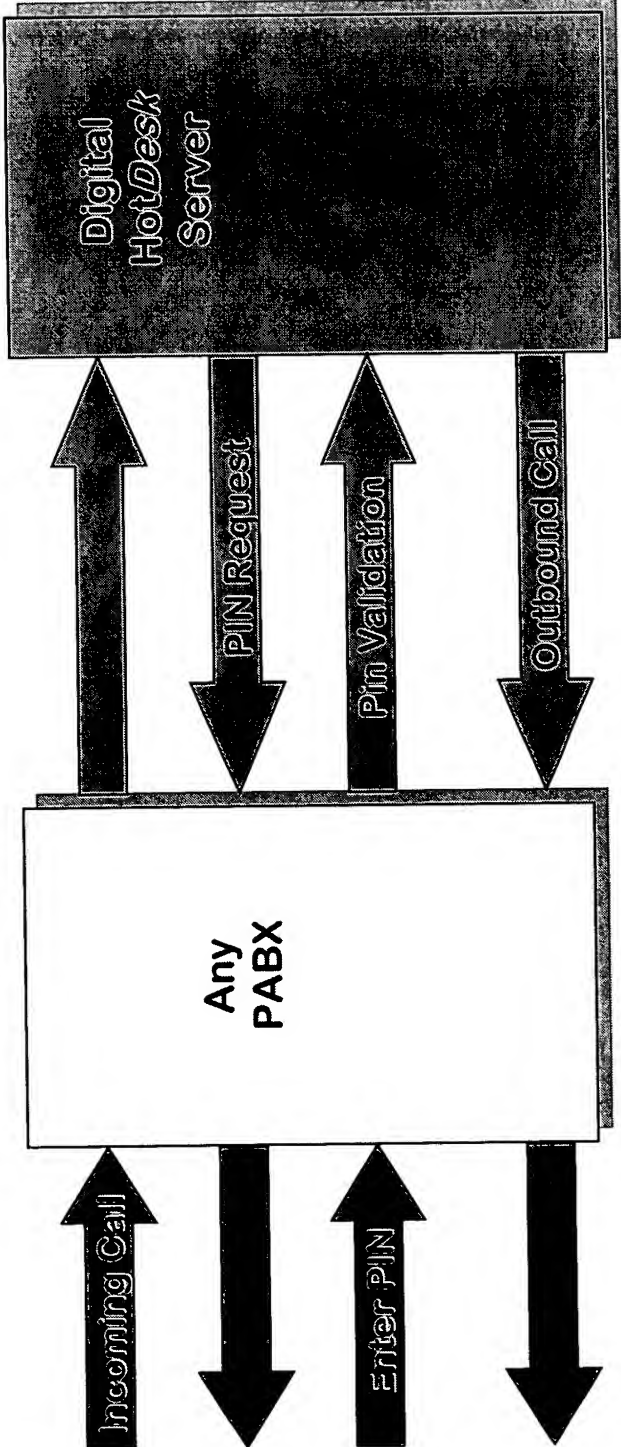
- User selects option and enters number for system to validate

- Invalid number will be rejected with an appropriate message
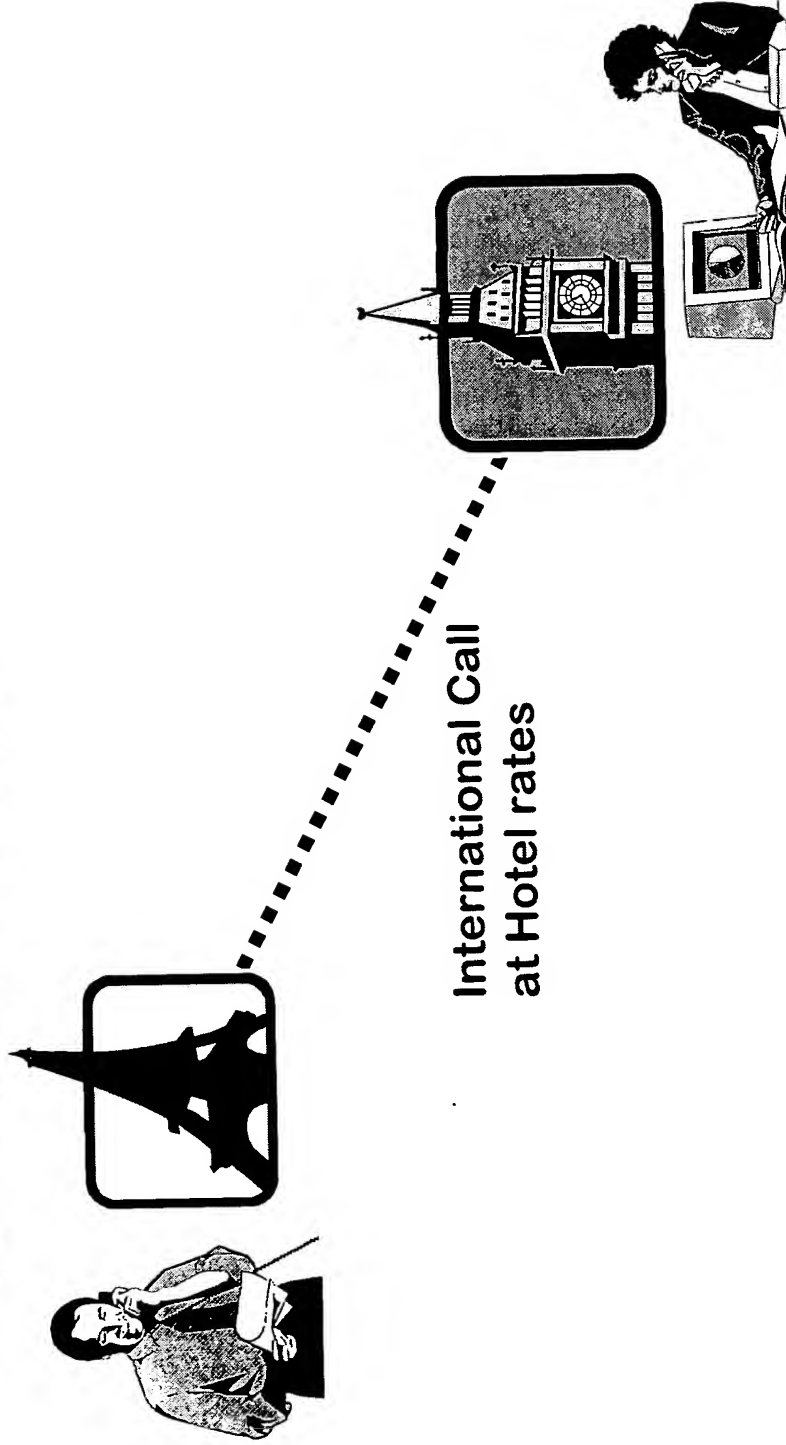
  e.g. – *Number barred*

  – *Invalid Number*

Secure access to make outbound calls.
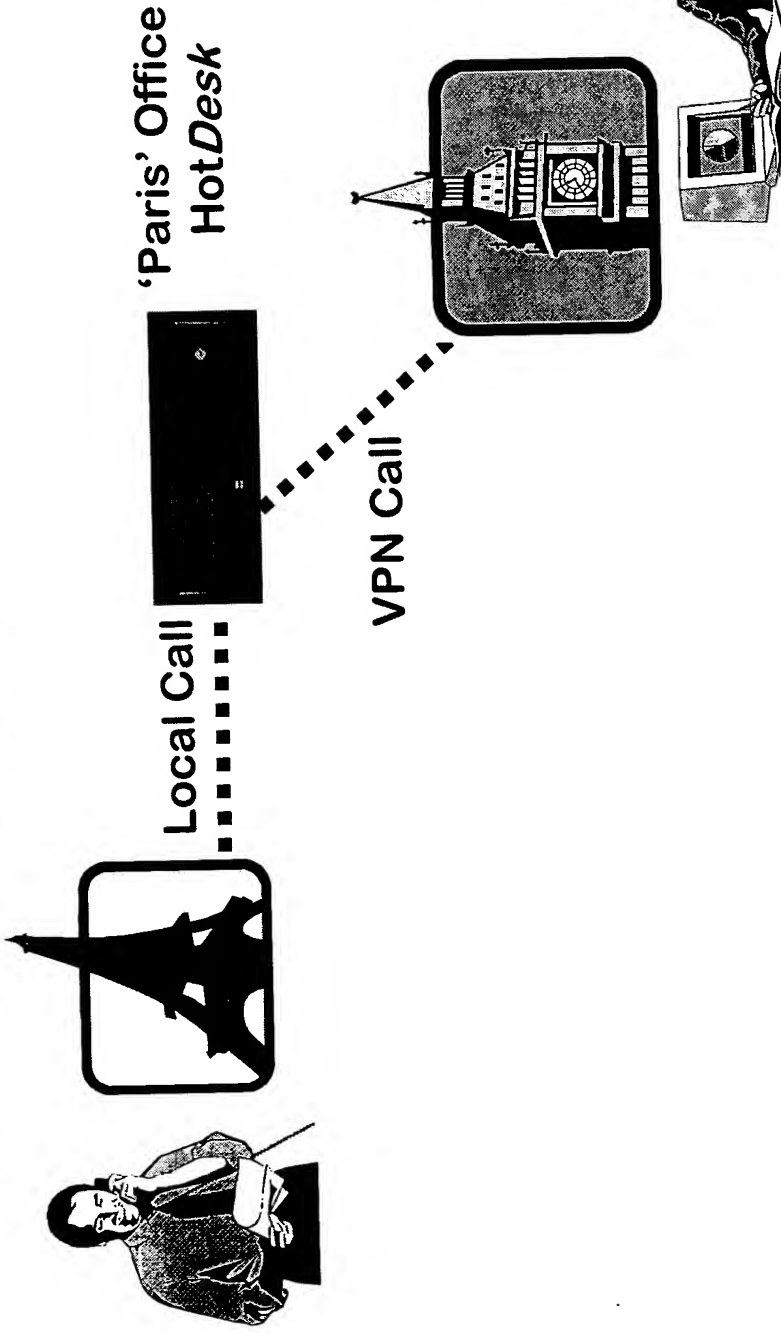
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Secure Call

Digital HotDesk Server

PIN Request

Pin Validation

Outbound Call

Any PABX

Incoming Call

Enter PIN

Billing record against the HotDesk user.

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Secure Call Uses

International Call
at Hotel rates

Hotel call charges are £££/$$$.

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Secure Call Uses

'Paris' Office
Hot*Desk*

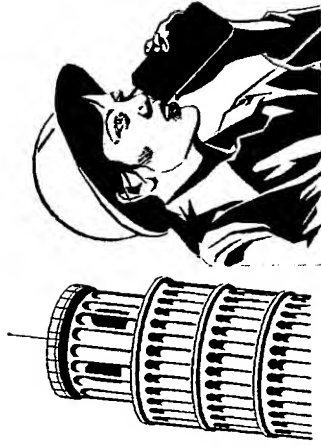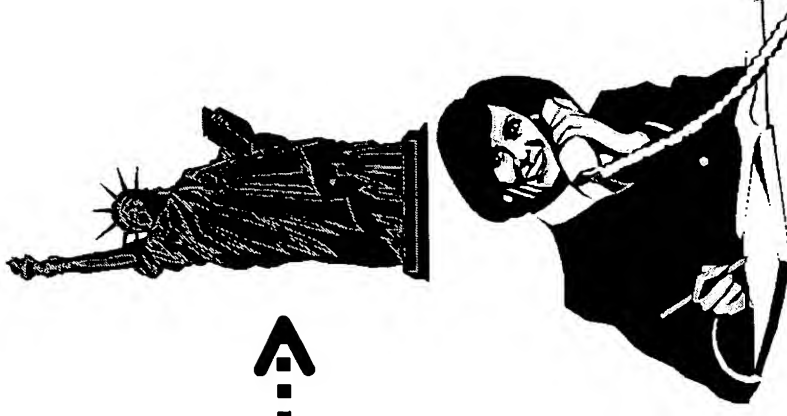Local Call

VPN Call

Calling via Hot*Desk* can save £££/$$$.

Secure Call Uses

International Call to USA
office from a Mobile in Italy

International mobile calls cost £££/$$$.

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Secure Call Uses

Call to local offfice

International Call to USA

International Call via VPN office
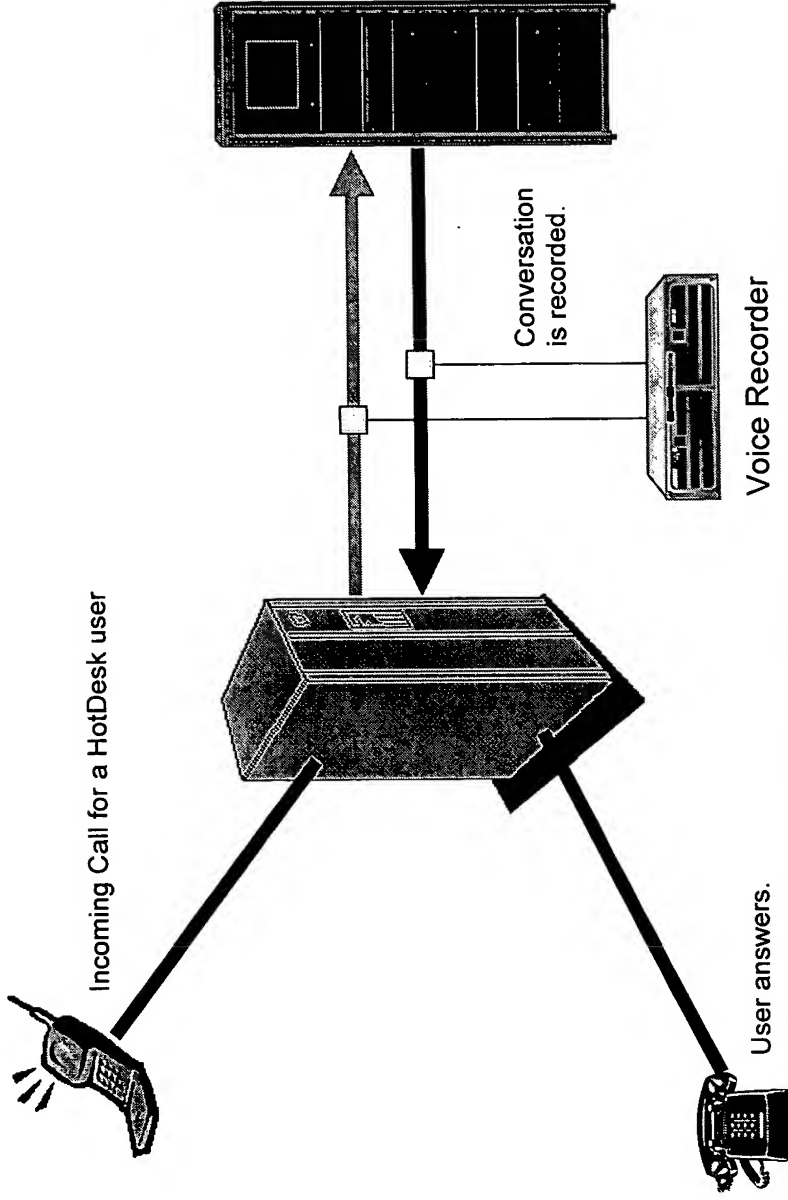
Local call is cheap, international call 'free'.

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Single Number Phone & Fax

FAX MAIL

Your DID

HotDesk No.

Fax Head r

Digital HotDesk
determines
what is a fax and
what is a phone call

Voice Recording

Incoming Call for a HotDesk user

Conversation is recorded.

Voice Recorder

User answers.
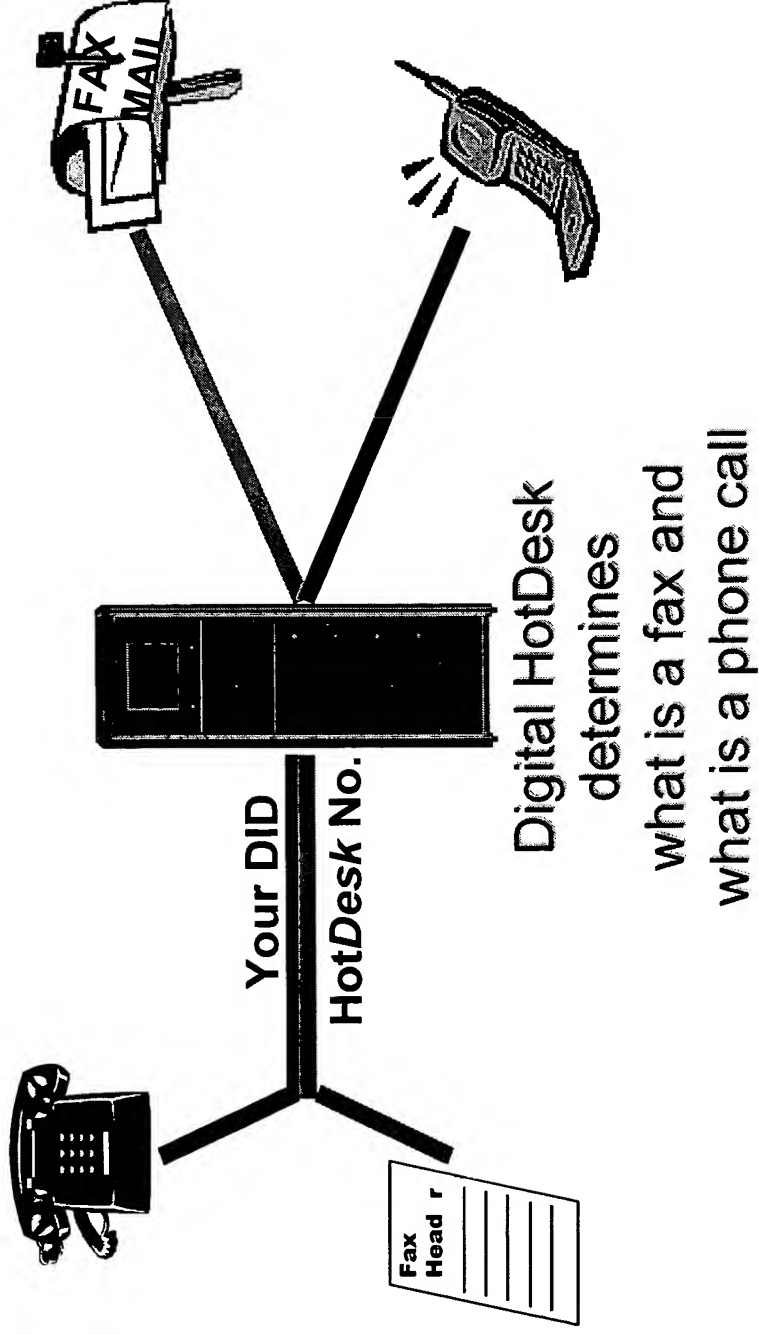
This prevents the call from optimising.

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Vortex
(Transfer, Shuttle, 3-Party Conference)

CALL SHUTTLE

Third Party

3-PARTY CONFERENCE

The user can create a
3-party conference
by pressing #, 2

CALL TRANSFER

Caller

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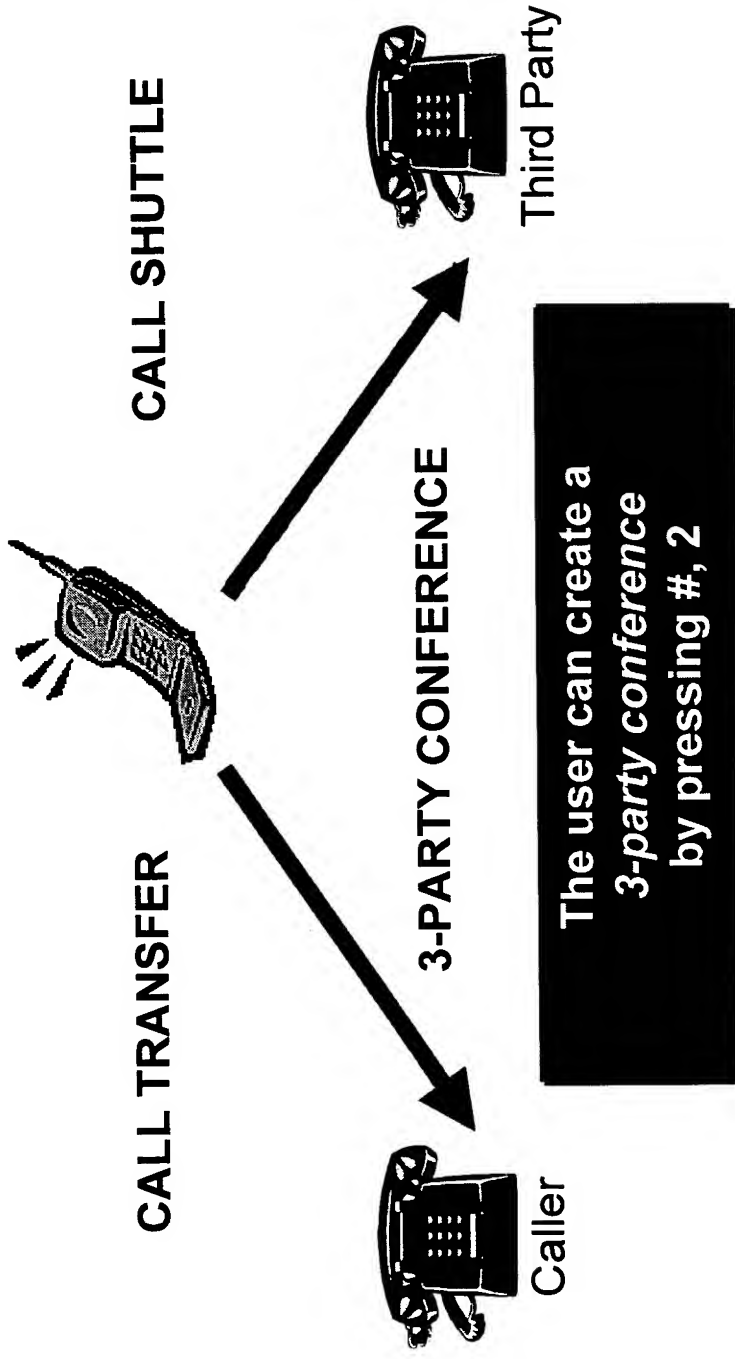
Zero In

Designed to allow users to have calls re-directed to any permissible location

- **Option accessible via TUI requiring user ID/Password**

  Feature can be enabled in user's

  Class of Service

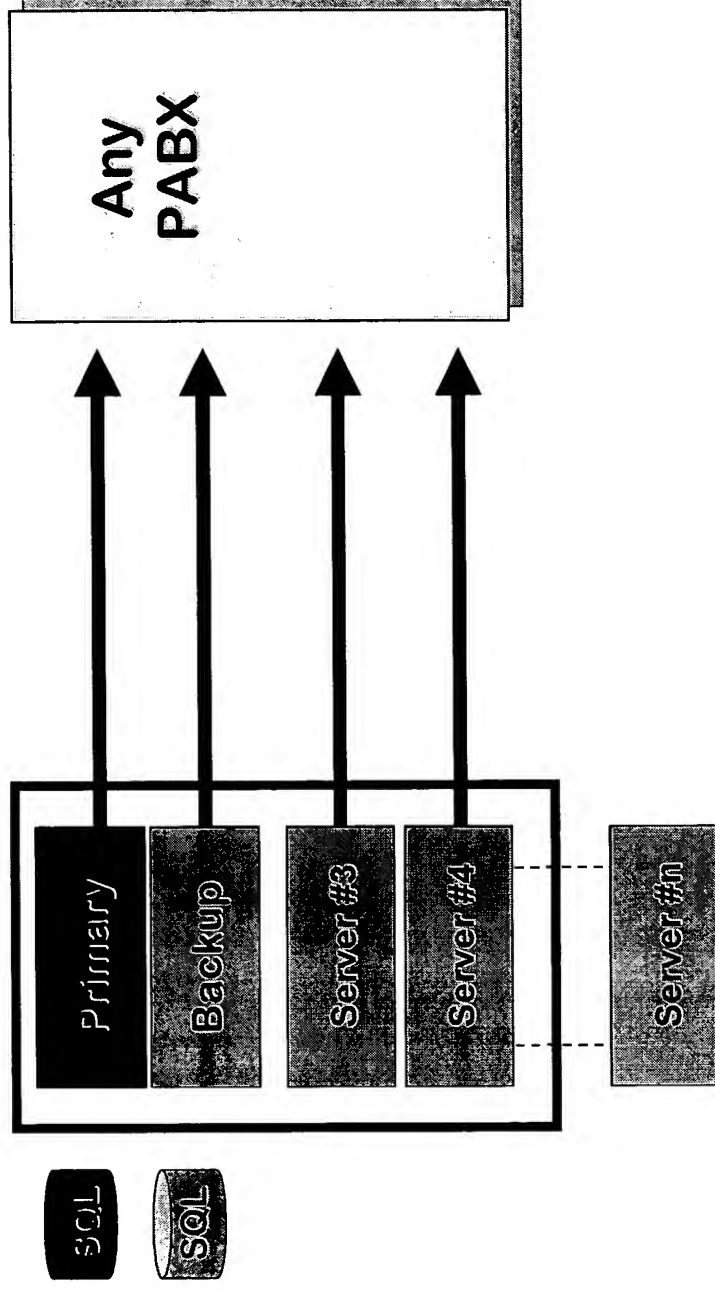 **Dependent on Site Number Rules**

  ANI recognition essential

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Agenda

Definitions

- Features

Architecture

- Integration/Connectivity
- Replication (Database Redundancy)

Administration
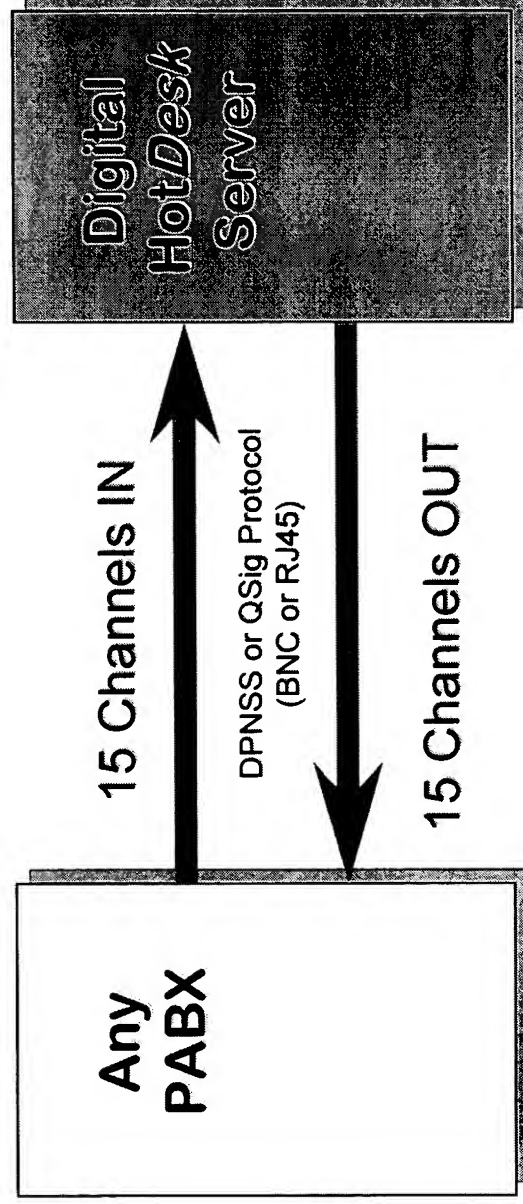
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Types of Hot*Desk* Server

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Types of Hot*Desk* Server

| Primary | Backup | Expansion | Expansion | Expansion |

Any PABX

SQL

SQL

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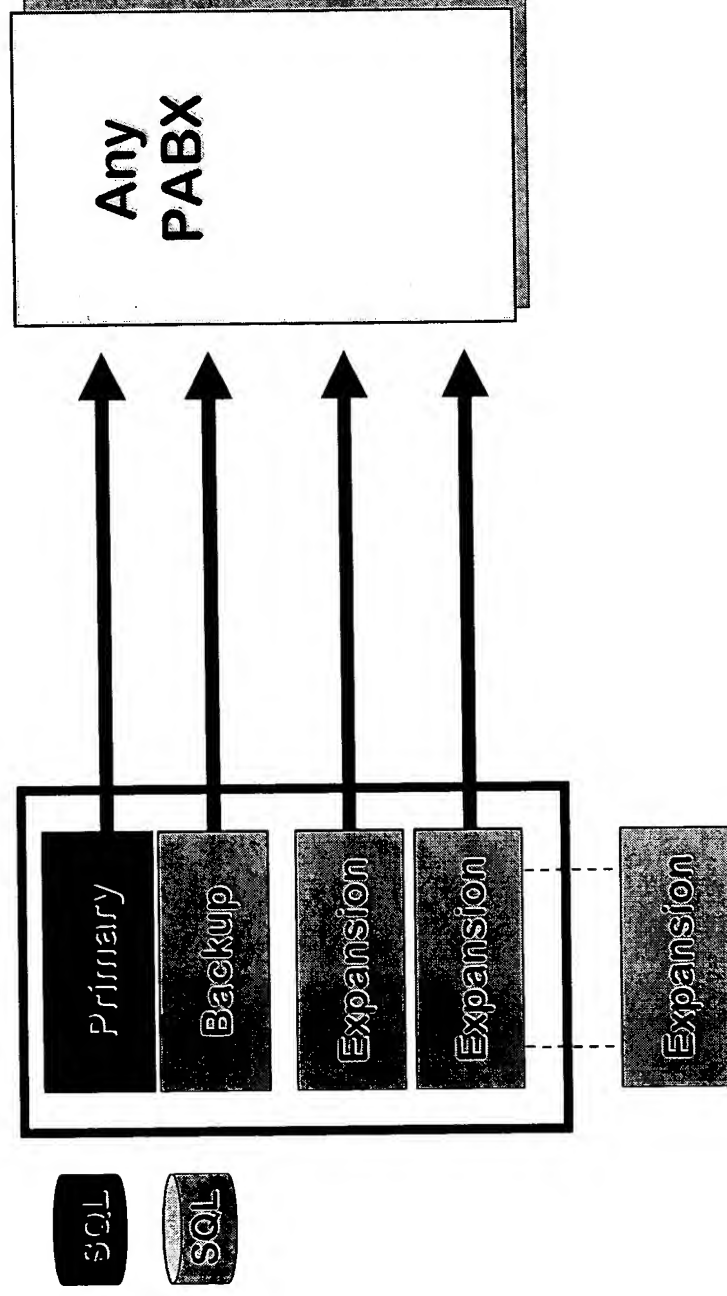
Server Comparison

Primary / Backup

Windows NT 4.0 Server

Service Pack 4

SQL Server 7.0

pcANYWHERE v8.0

Digital HotDesk App.

• Expansion Server

- Windows NT Workstation
- Service Pack 4
- pcANYWHERE v8.0
- Digital HotDesk App.

The hardware is identical

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Standard Connection

Digital *HotDesk* Server

Any PABX

Corporate Telephone System

15 Channels IN

DPNSS or QSig Protocol
(BNC or RJ45)

15 Channels OUT

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Conferencing Enabled

Digital HotDesk Server

Corporate Telephone System

Any PABX

13 Channels IN

DPNSS or QSig Protocol
(BNC or RJ45)

17 Channels OUT

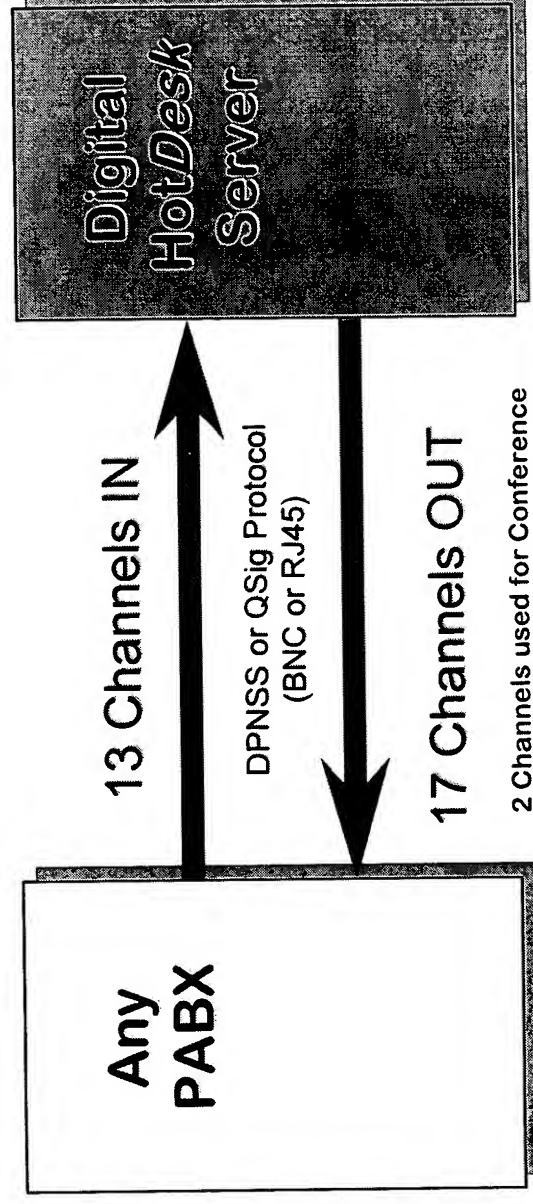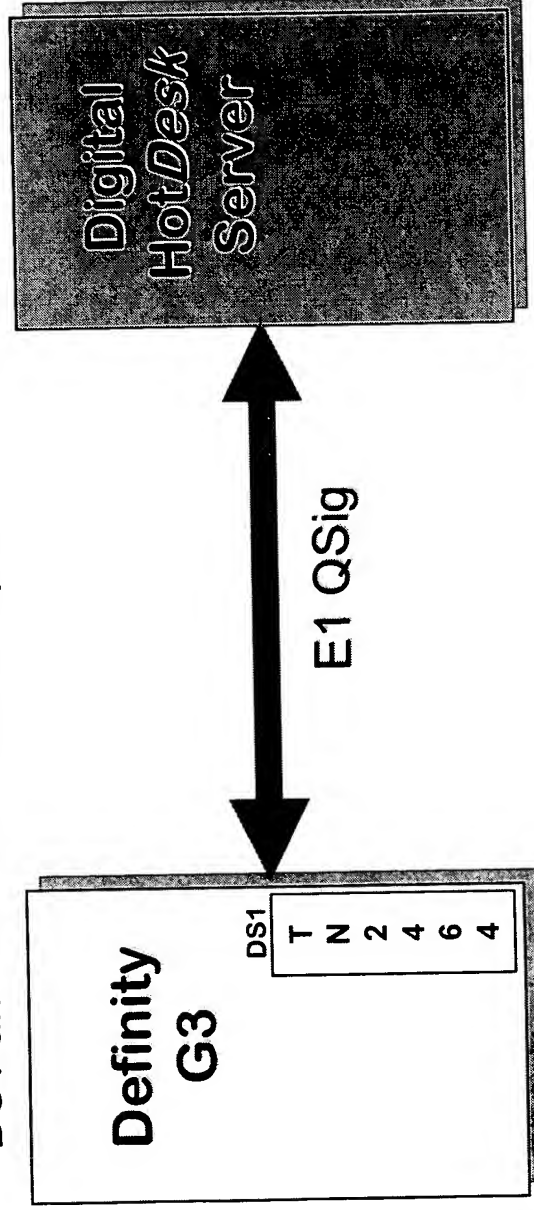2 Channels used for Conference

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Connection to a Definity

Our current method of integration requires:

- QSIG, Private Networking, and UDP software activated.
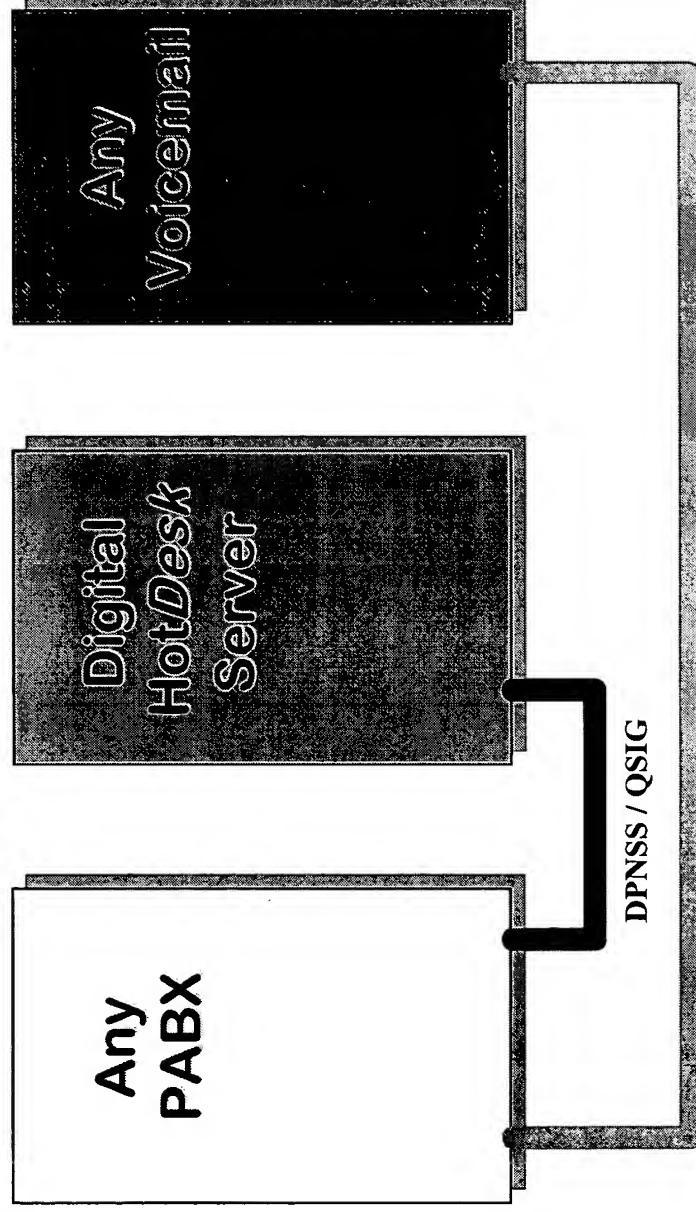- DS1 and an 888B coax adapter.

Definity G3

DS1
T
N
2
4
6
4

Digital HotDesk Server

E1 QSig

Corporate Telephone System

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Connection to Voicemail

Any PABX — **Digital HotDesk Server** — **Any Voicemail**

DPNSS / QSIG

Any type of integration

Voice mail interface

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Connection to Octel VM

Any PABX

Digital *HotDesk* Server

Octel Access Server
Octel Designer TUI App.

Octel Voicemail

Voice mail Interface

DPNSS / QSIG

TCP/IP

TCP/IP
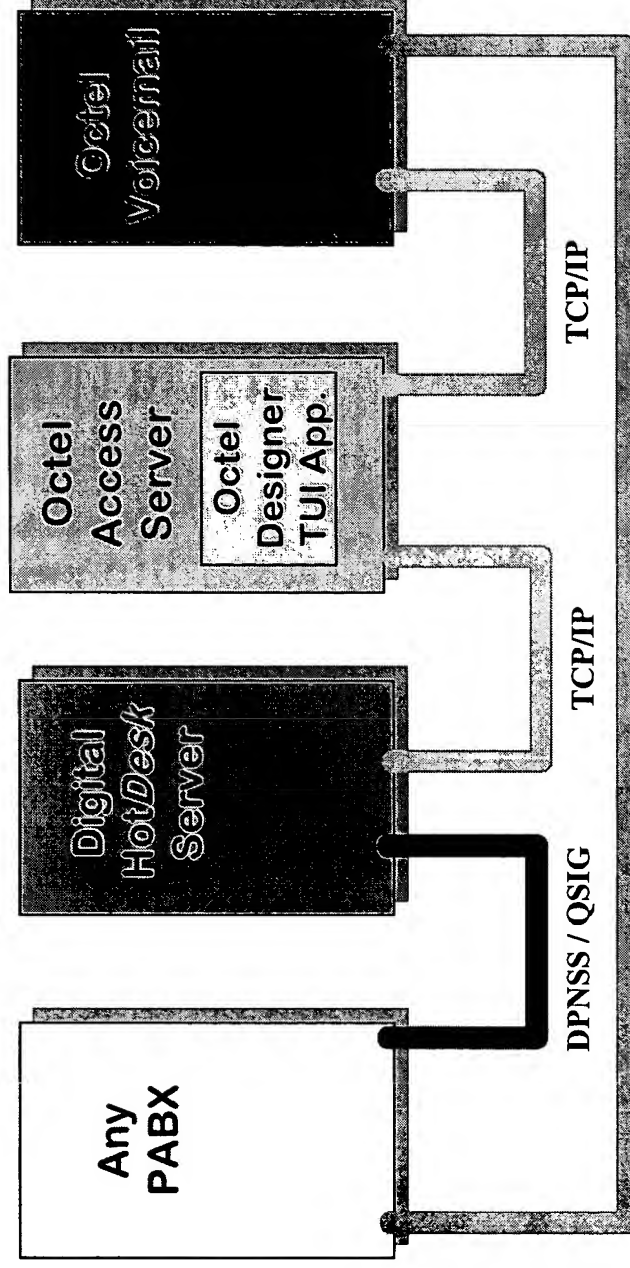
Any type of integration

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THE NEED FOR REPLICATION!
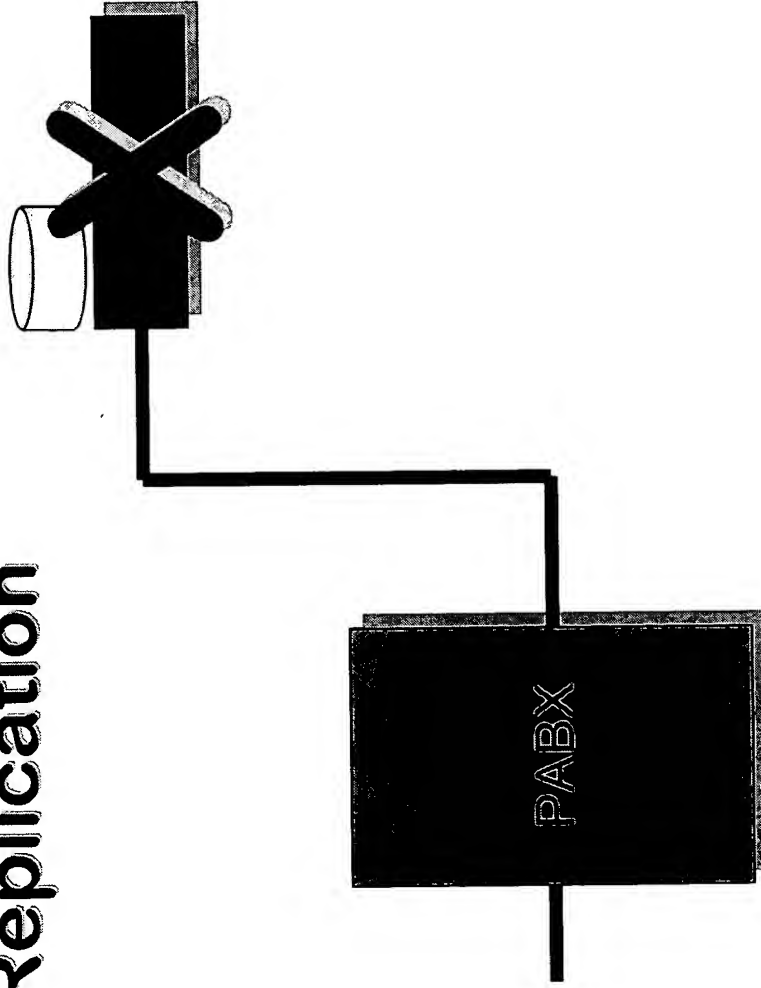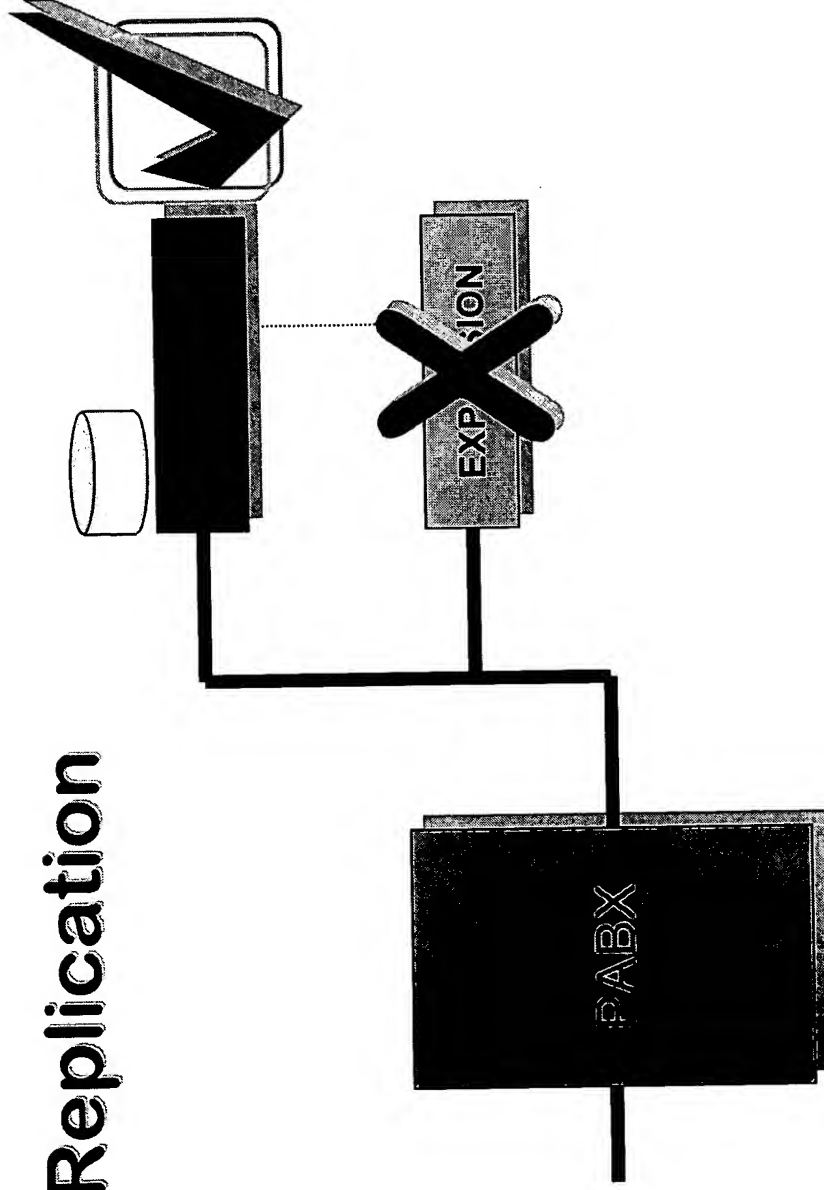
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Replication

PABX

- •Total Loss of Call Handling Capability.
- •Total Loss of Update Capability.
- •Total Loss of Availability.
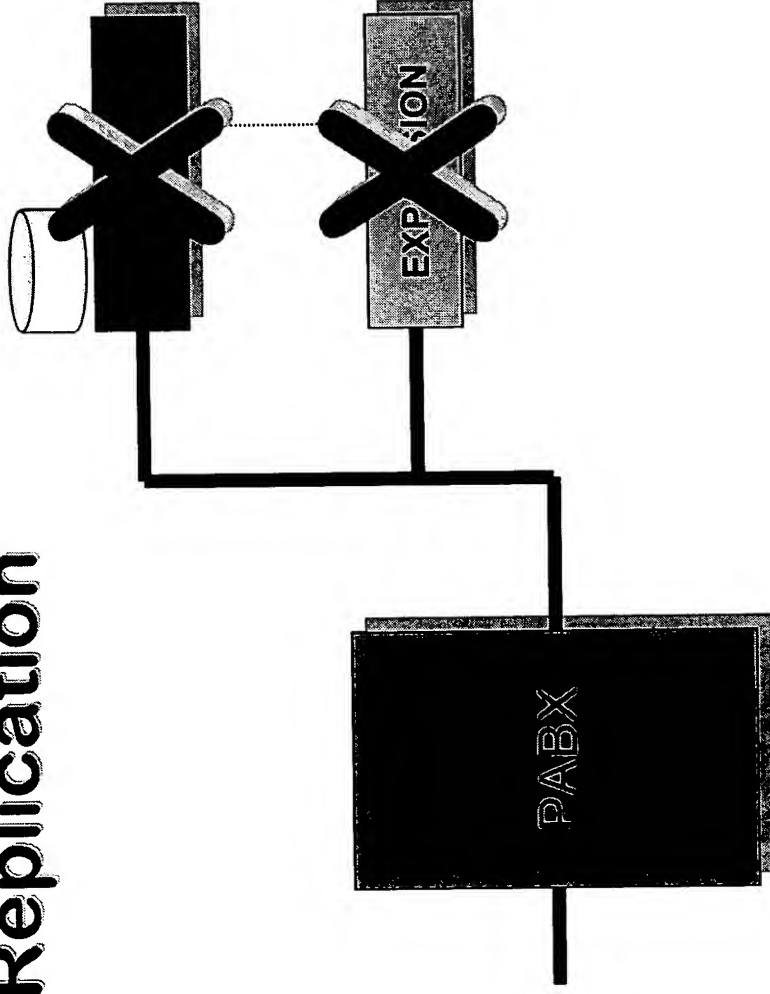
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Replication

EXP(_)ION

PABX

- 50% Loss of Call Handling Capability.
- No Loss of Update Capability.
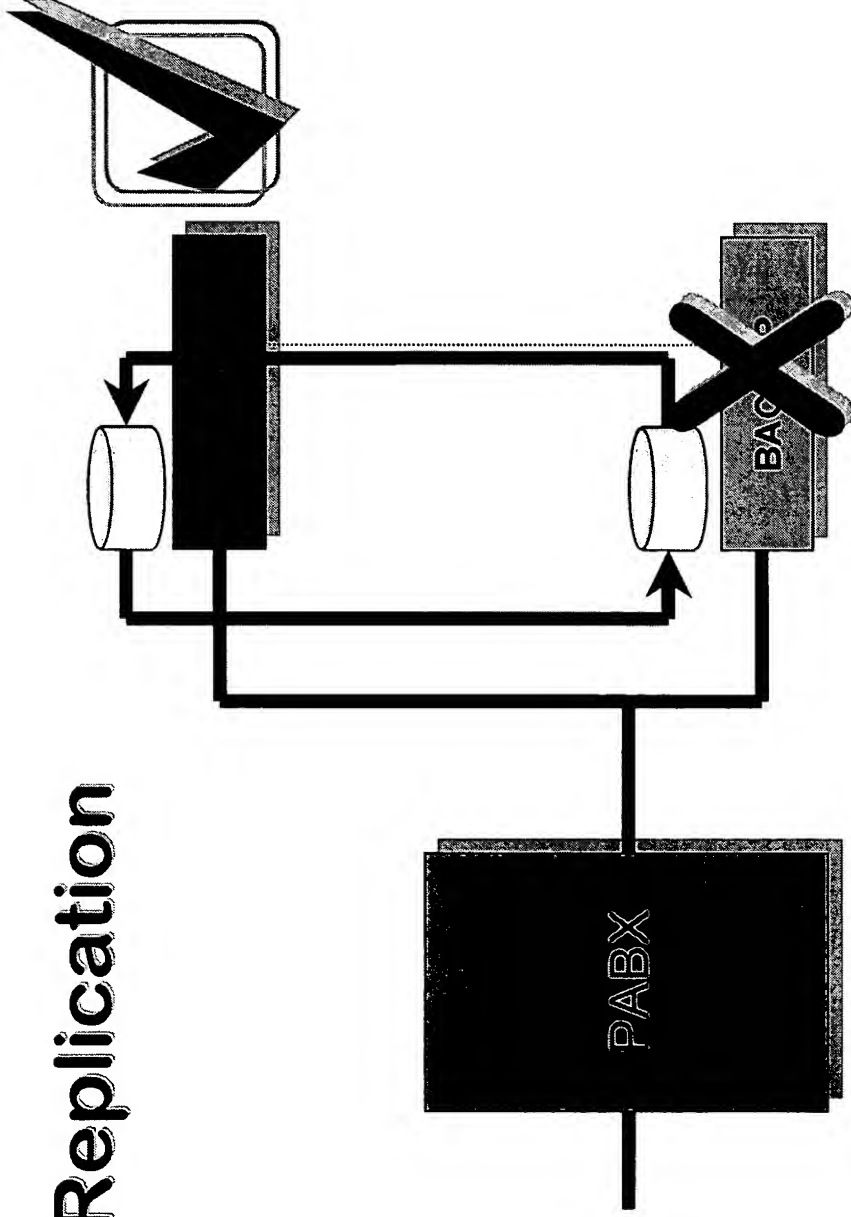- No loss of Availability.

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Replication

- •Total Loss of Call Handling Capability.
- •Total Loss of Update Capability.
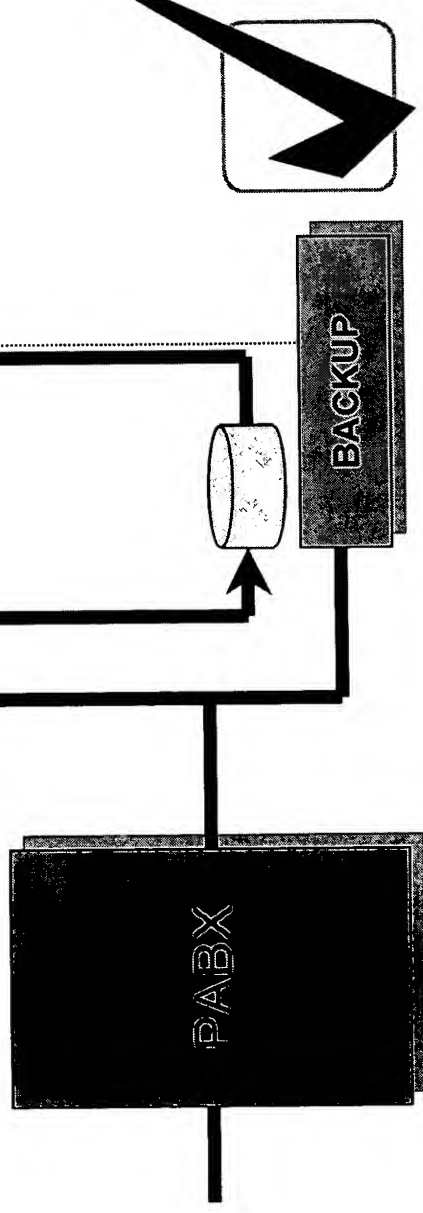- •Total Loss of Availability.

EXP SION

PABX

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Replication

PABX

BAC...

- **50% Loss of Call Handling Capability.**
- **No Loss of Update Capability.**
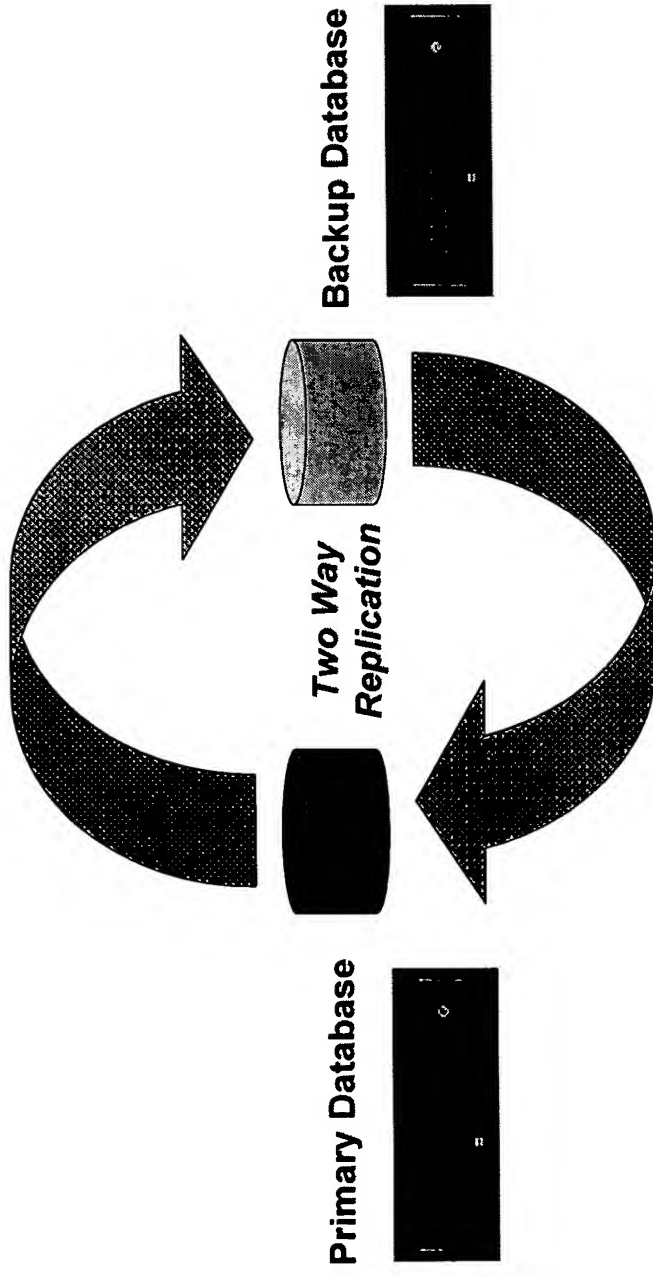- **No Loss of Availability.**

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Replication

- 50% Loss of Call Handling Capability.
- No Loss of TUI / MTI Update Capability.
- Total Loss of OAS / GUI / DTI Availability.

PABX

BACKUP

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Fault Tolerance

Backup Database

Two Way
Replication

Primary Database

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Fault Tolerance

Backup Database

Expansion Servers

Two Way Replication

Primary Database

AVAYA communication

Fault Tolerance

Backup Database

Primary Database

Two Way Replication

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Fault Tolerance

Fault Tolerance

Primary Database
Unavailable

Two Way
Replication

Backup Database

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Fault Tolerance

Backup Database

Two Way Replication

Primary Database Back On-Line

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Fault Tolerance

Primary Database
Unavailable

Backup Database
Unavailable

PABX Alarm

PABX Alarm

PABX Alarm

PABX Alarm

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Terminology

DHD_SERVER1

DHD_SERVER2

Publisher / Distributor

Subscriber

The SUBSCRIBER database subscribes for the CARTICLES or PUBLICATIONS.

A SUBSCRIPTION is where the DISTRIBUTOR pushes changes to the SUBSCRIBER.

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Merge Replication

Update

Update

Update

Publisher & Distributor

DHD SERVER3

Subscriber

DHD SERVER2
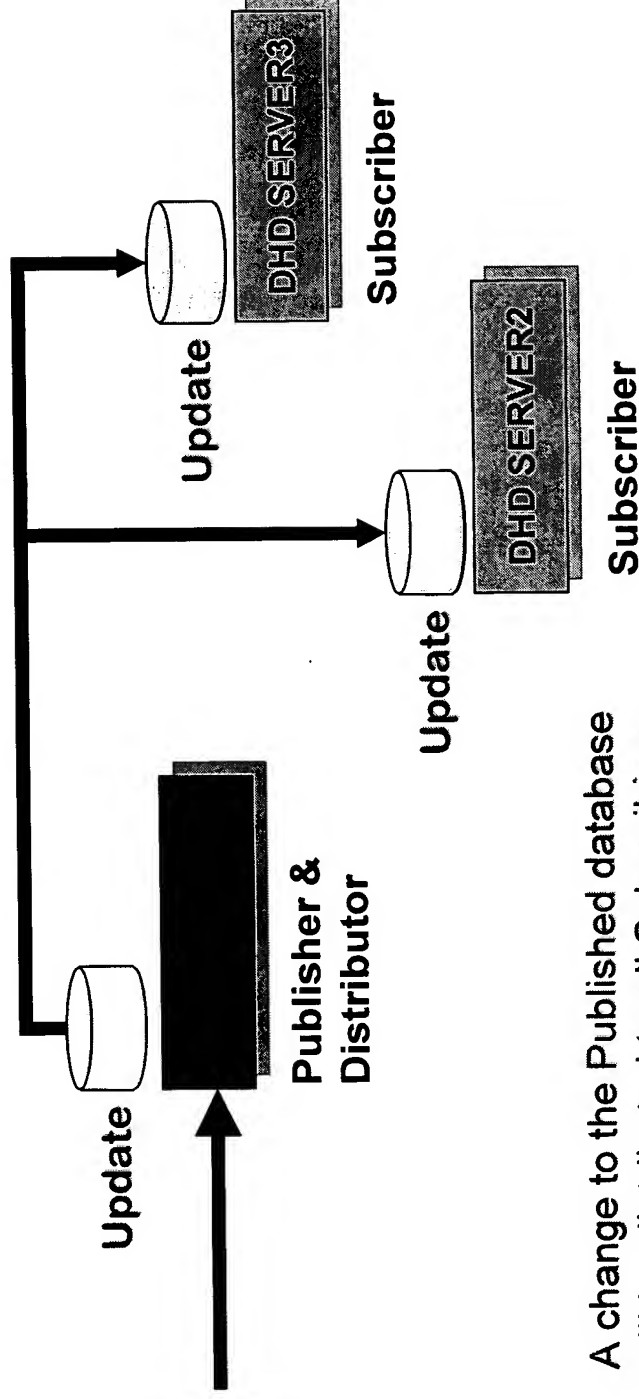
Subscriber

A change to the Published database will be distributed to all Subscribing servers.

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Merge Replication

Update

**Publisher &
Distributor**

Update

DHD SERVER3

Subscriber

DHD SERVER2
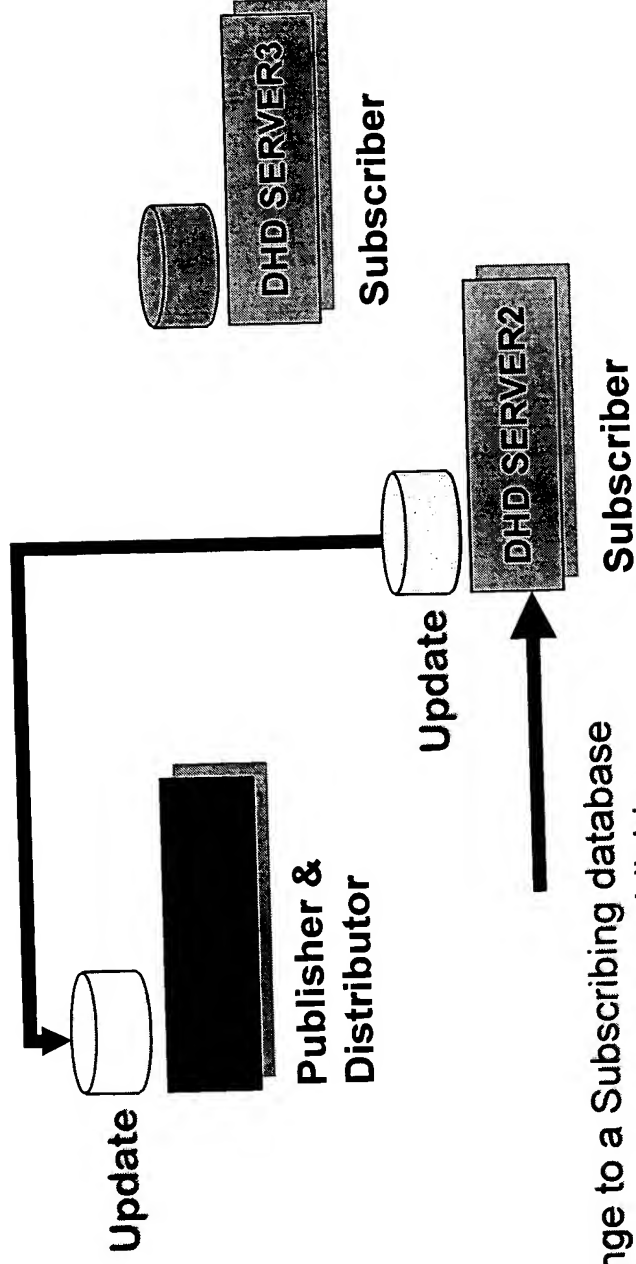
Subscriber

A change to a Subscribing database
will be merged with the Publishing
database..

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Merge Replication

Publisher & Distributor

Update → **DHD SERVER3**
Subscriber

Update → **DHD SERVER2**
Subscriber
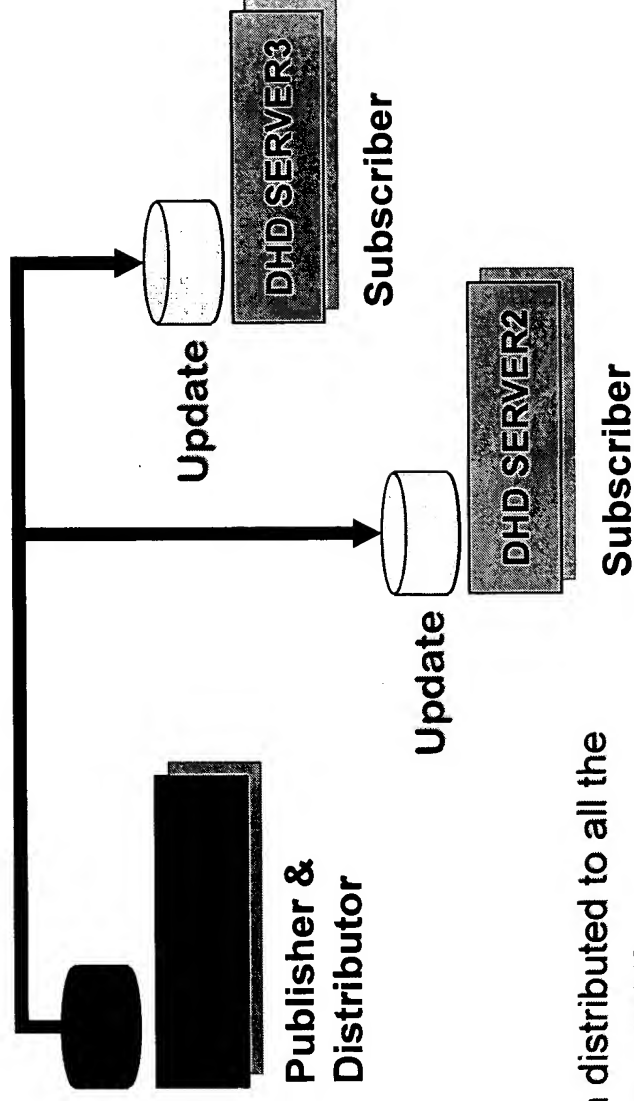
And is then distributed to all the Subscribing servers.

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Agenda

Definitions

Features

Architecture

- Integration/Connectivity

- Replication (Database Redundancy)

Administration

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ADMINISTRATION

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Digital HotDesk 2.4

+ Add   X Delete   Edit   Options ▾

Main

User
Site
Class Of Service
Group
System

View

HotDesk
- User
  - All Users
- Site
  - Uxbridge
    - Number Rules
  - Fleet
    - Number Rules
- Class Of Service
  - Contractor
  - General
- Group
  - Marketing(7002)
  - Service(7003)
  - Purchasing(7004)
  - Order Admin(7001)
  - test(7005)
- System
  - CLI Translation
  - Administrators
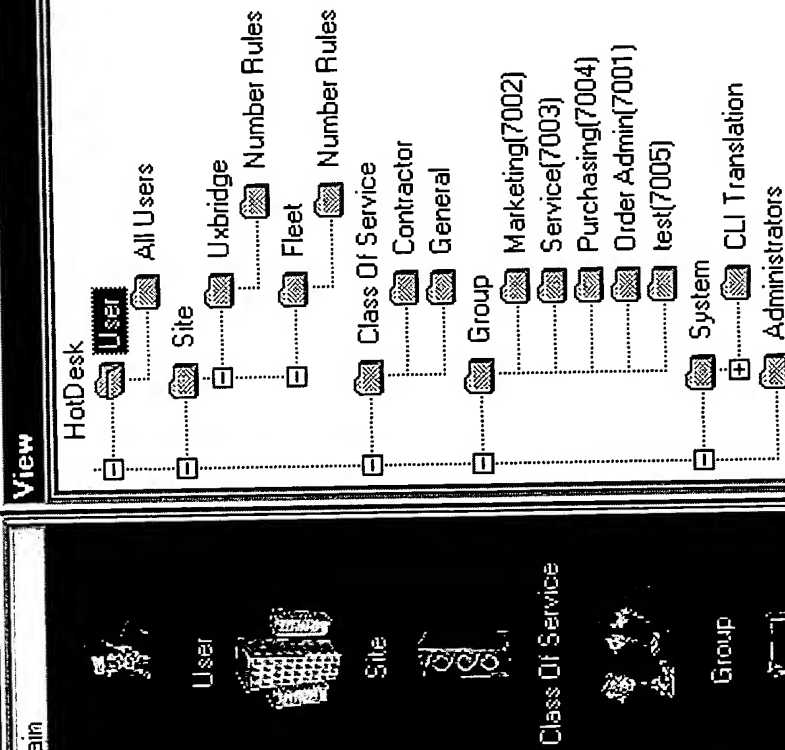
UserID	UserName
3890	Winters, John
3519	Jones, Mike
3192	Callaghan, Paul
3009	Greenwood, Richard
3008	Henry, Emily
3567	Mann, Sarah
3102	Harvey, Michelle
3103	Murphy, Peter
3672	Thompson, Geraldine
3434	O'Connell, John
3435	Jones, Trevor
3391	Lodge, Andy
3912	Williams, Niamh
3079	Leeson, Geoff

communication

Administration GUI
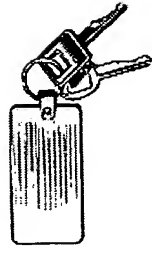
5 levels of Administration Access
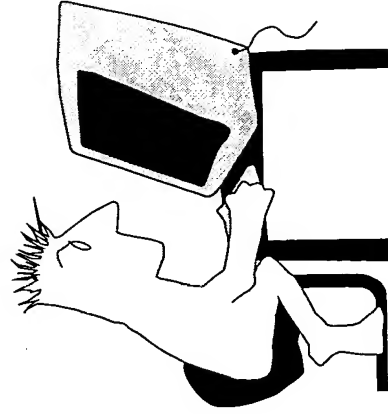
- User
- Group
- Class of Service
- Site
- System

AVAYA
communication

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File   Options   View   Help

Incomin...	**Calling ID/User**	**Application Status**
	01844297592 (3435)	Connected
	(3417)	Connected
		Listening
	44157543 (3469)	Connected
	44075032 (3285)	Connected
	(3237)	Call On Offer
		Listening
		Listening
		Listening
		Listening
		Listening
		Listening
		Listening
		Listening
	0370633183 (3479)	Connected

702 Secs
196 Secs
69 Secs
27 Secs

Outboun...	**Application Status**	**Description**
	Connected	ReRoute 1 Mobile (90375984150)
	Connected	ReRoute 1 National (90118975814 0)
	Idle
	Connected	ReRoute 1 Mobile (90385381575)
	Connected	Attempt 0 Mail (5555)
	Making Call	ReRoute 1 Mobile (90467502184)
	Idle
	Idle
	Idle
	Idle
	Idle
	Idle
	Idle
	Connected	ReRoute 1 National (90162810284)

Ready

Start   hdview   5:30 PM